

Manufacturers Record

Exponent America



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Baltimore, Md.
FEBRUARY 20, 1930

Value of Sunshine in Construction Work

Darwin P. Kingsley, president of the New York Life Insurance Company, in a letter to the Manufacturers Record referring to the value of the South's sunshine as one of its great assets, once said:

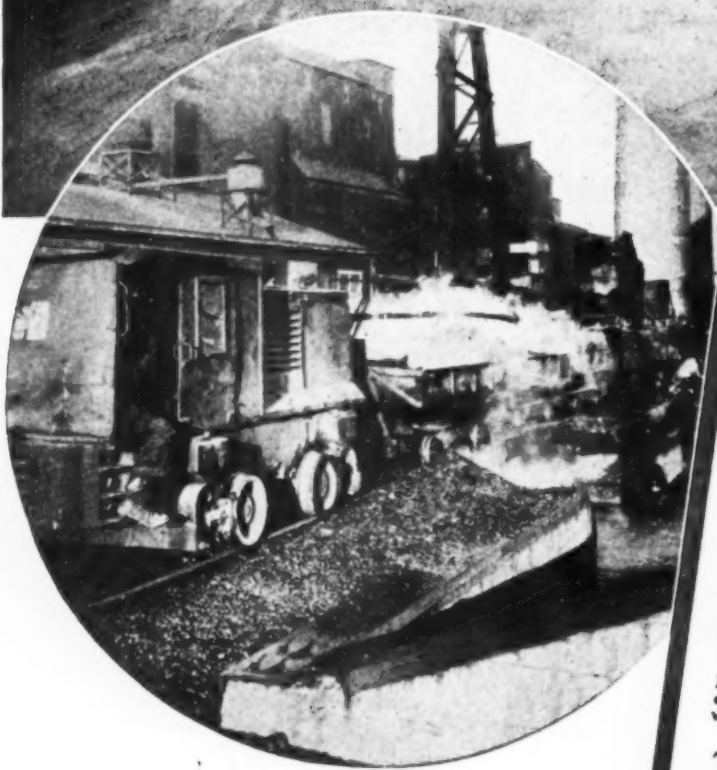
"Climate is the key which opens the door to Paradise."

The South's climatic advantage enables it to do construction work throughout twelve months of the year. Nowhere else in the country is this feasible except along some parts of the Pacific Coast. All construction work is hampered in the North and West during the winter by the harshness of the climate. The South's sunshine and comparative warmth through the winter makes outdoor work in highway building and construction work of all kinds entirely feasible.

This is an asset of the South the importance of which cannot be rightly measured, except by those who count the difference between twelve months of steady construction activities in every year as against the seven to eight months in which construction can be done to advantage in other parts of the country. It is no wonder, therefore, that the construction interests, builders of all kinds, makers of machinery and equipment for highway and other construction activities, and manufacturers generally are turning their attention to the South as a field of activity.

The market throughout the South for construction equipment of every kind is growing with great rapidity, and wise indeed are the business people who, seeing this situation, take advantage of it. The South is now spending far more money on highway work, for instance, than the entire country thus expended a few years ago. The extension of its electric activities, its railroad facilities, its waterway and terminal developments, and other lines of kindred work, should appeal tremendously to every maker and distributor of construction machinery, equipment and materials, and to every engineer and contractor who wants to develop a twelve-month-round construction activity.

Here, indeed, is an asset which has rarely been fully considered, but it truly merits the enthusiastic statement of President Kingsley that these climatic advantages are an asset of immeasurable value not only to preservation of health but to the promotion of business.



Ash Removal Labor Cost Reduced 66%

During 1927, a manufacturing plant in the Middle West spent \$23,679.50 for ash removal labor. Two twelve-hour shifts of seven men each were required to remove the 200 tons of ash daily.

They installed the Hydrojet System of Ash Removal and, as shown by the illustrations, ashes are now pumped to the storage sump instead of being hauled in cars by a locomotive. This reduced their ash removal labor cost to \$7800.00 per annum—a saving of 66%.

The unit cost for ash handling per ton of coal burned in this plant formerly was 12.7c per ton. Including all fixed charges and operating expenses, the Hydrojet has reduced this to 5.75c per ton.

Let one of our engineers analyze your conditions to determine what your ash handling costs would be with a Hydrojet.

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HYDRO JET

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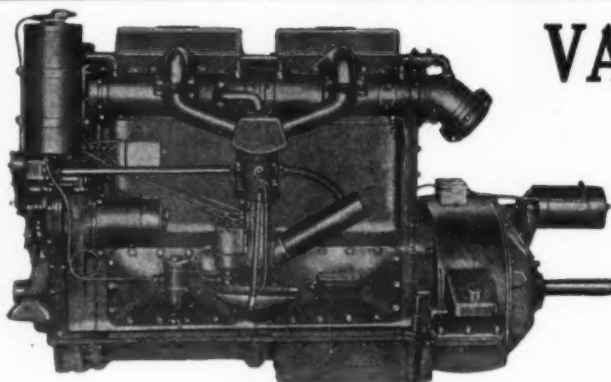
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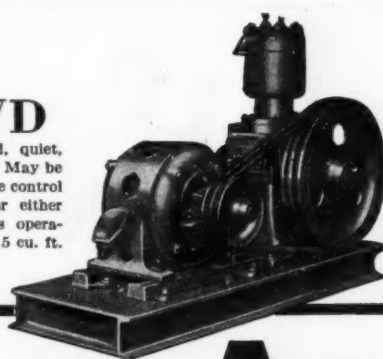


Model W

Water cooled. Four sizes, from 4 x 3 1/4 to 5 1/4 x 5 Duplex. Displacements, from 15 cu. ft. to 128 cu. ft., depending upon size of compressor and horse power of motor. Maximum pressure, 150 lbs. Illustration shows automatic unloader for maintaining uniform pressure under continuous operating conditions.

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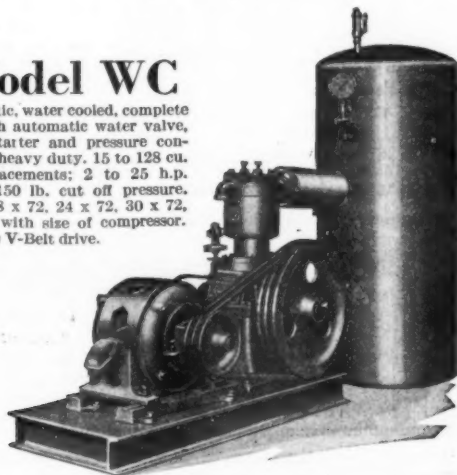
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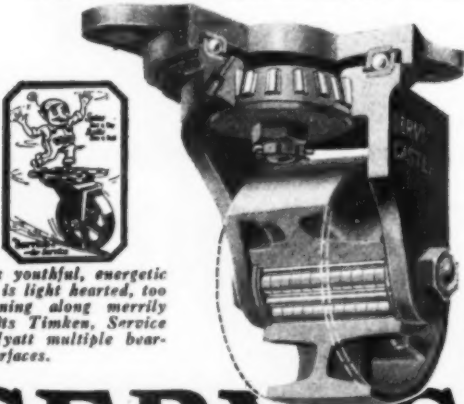
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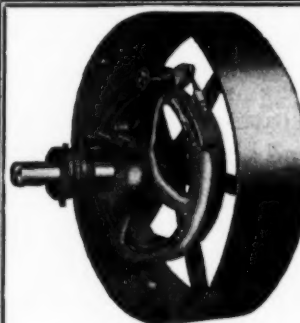
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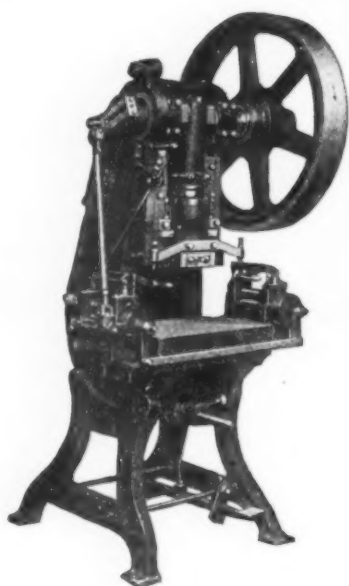
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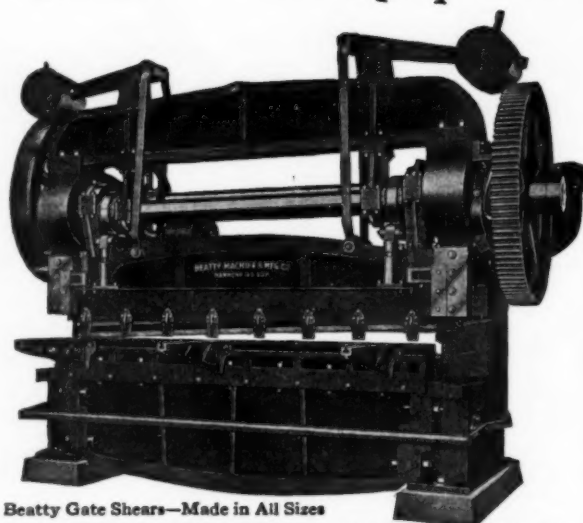
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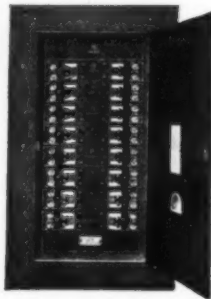
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GLARE



is your eyes'



chief enemy

HOW glare can interfere with ease and certainty of movement and thus slow down production in an industrial plant is simply demonstrated. Drive your car at night and observe the glaring headlights. They slow you down, don't they? Or watch the outfielder at a ball game miss an easy fly when the sun is in his eyes. Consider the precautions the Esquimaux take to protect themselves against snow-blindness—how they wear eye masks with narrow slits to shut out glare. The Indian with his hand shading his eyes is a well remembered picture.

Yet in many plants today improper lighting puts glaring light sources directly in the field of vision for all workers. Or a plant is so lighted that glittering reflections come from the highly polished surfaces of machinery. Wherever there are spots of brightness excessively different from their surroundings, the eye tries to adapt itself to them and cannot discriminate details to whose brightness it is not adapted.

Because Cooper Hewitt light produces no glare is one of many reasons why it is used today in leading industrial plants. Cooper Hewitt light is used by such outstanding exponents of manufacturing efficiency as General Motors, Stehli Silks, S. K. F. Industries, Holeproof Hosiery and a host of leaders in other manufacturing fields.

It will interest you to know all the reasons. For this purpose a simply written booklet has been published entitled, "Why Cooper Hewitt Light is Better Than Daylight." Yours for the asking. Address: General Electric Vapor Lamp Co., Hoboken, N. J.

SINCE cool yellow and green, the best-seeing rays known to science constitute over 90% of Cooper Hewitt light, workers do more and better work under this kind of illumination.

BLUE and violet (which have relatively low visual power) constitute less than 10% of Cooper Hewitt light.



Cooper Hewitt Spectrum

Daylight Spectrum

OBERVE the prominence of red and orange in daylight and their total absence in Cooper Hewitt light. These colors (especially red) are relatively low in "seeing power."

GENERAL  ELECTRIC
VAPOR LAMP COMPANY

(Formerly Cooper Hewitt Electric Company)

[See next page]

Like opera glasses at the opera —



Field glasses can serve little purpose in the laboratory. There only the microscope will do. Opera glasses are of little use to the astronomer. The telescope serves his purpose in the observatory. Indeed, none of these aids to vision is effective for any other purpose but its own.

As these different kinds of glasses serve best the different purposes of each, so in these modern days of specialization is it recognized that different kinds of light serve best their different special purposes in commerce and industry—daylight, ordinary artificial light and—Cooper Hewitt light.

Cooper Hewitt mercury-vapor illumination is a very special kind of light which serves, even better than daylight, in many industries. Because it is composed almost entirely of the middle rays of the spectrum—the yellow-green, by which, science says, human eyes see best—Cooper Hewitt light is used in industries where glare and dark shadows must be eliminated, where inspectors and workers must see



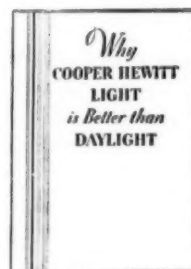
BETTER THAN DAYLIGHT

small details sharply and clearly without eye-strain.

Because Cooper Hewitt light is specialized industrial light, you'll find Cooper Hewitt mercury-vapor lamps installed today in leading automobile plants, machine shops, sheet metal plants, wood-working plants, shoe factories, glass factories, silk mills, knitting mills, woolen mills, cotton mills, rubber mills and printing plants and a host of others.

Perhaps Cooper Hewitt light is the one best light for your plant. May we demonstrate, by a trial installation, its many advantages? No obligation whatever. Address: General Electric Vapor Lamp Company, 819 Adams Street, Hoboken, N.J.

LEARN what modern science has discovered about light and particularly the special advantages, economical and otherwise, of mercury-vapor illumination. It is explained in simple language in an illustrated new booklet, "Why Cooper Hewitt Light is Better than Daylight." You'll incur no obligation whatever by writing for it.



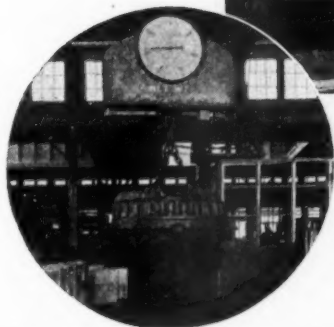
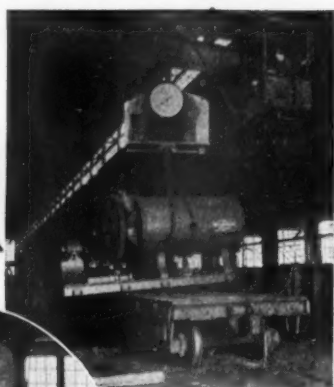
GENERAL  ELECTRIC
VAPOR LAMP COMPANY

(Formerly Cooper Hewitt Electric Company)

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Kron Crane Scales are giving the greatest satisfaction in the largest organizations in the country. In Steel and Iron Mills and Foundries for weighing pigs, ingots, bars, rails, castings, etc., in production or for use on the crane in the yards. Speed, economy and accuracy are secured and maintained.

Kron Scales are safety factors in weighing.

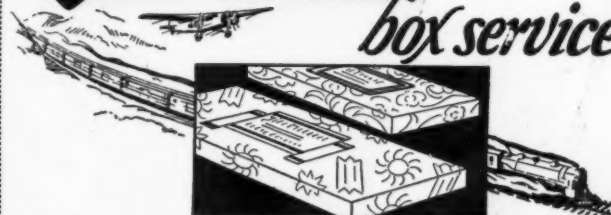


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spruce, steel
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rack.



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TRESTLES—Fully adjustable.



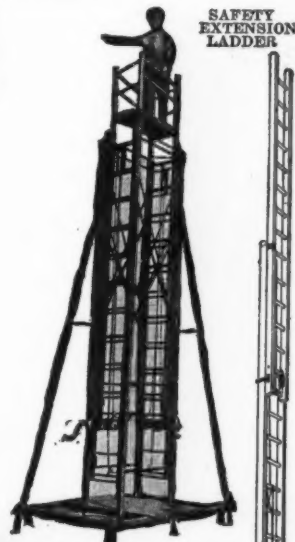
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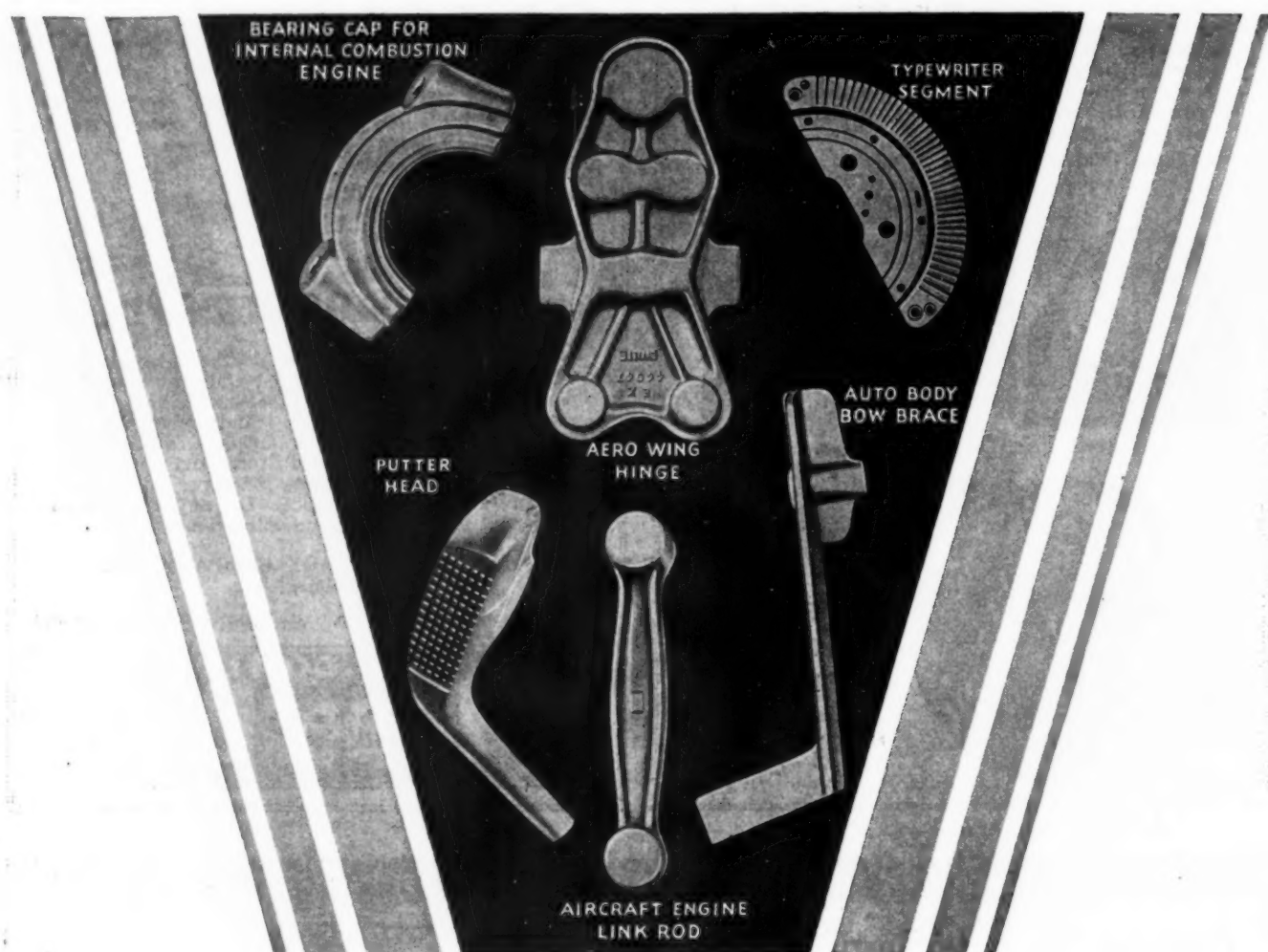
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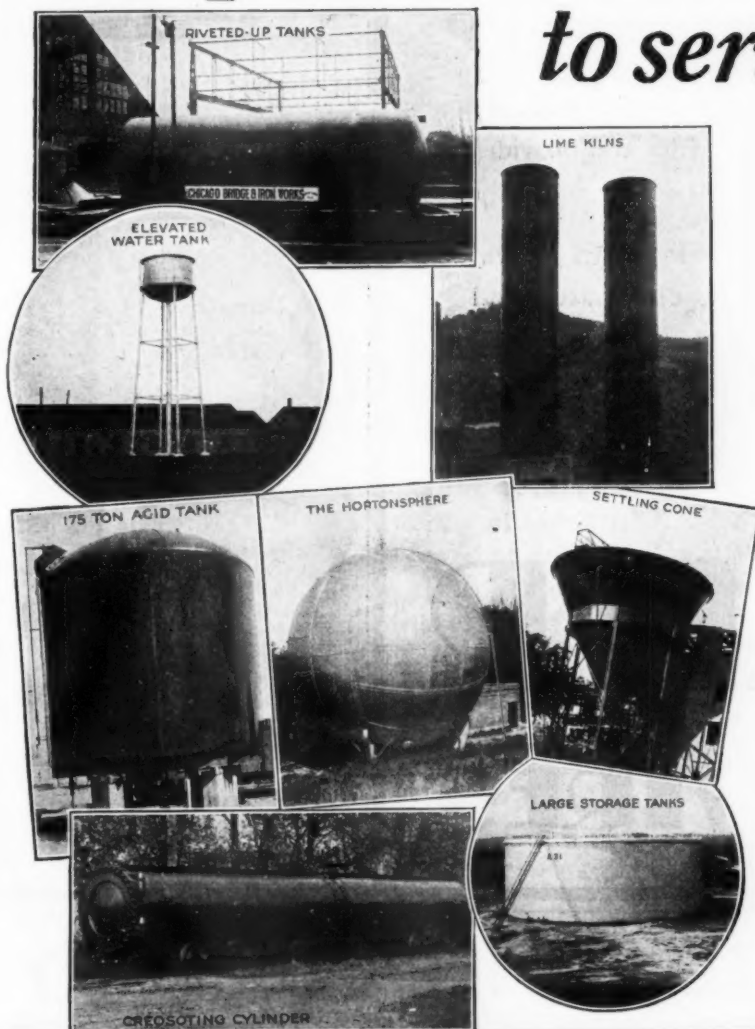
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FORGED OF ALCOA ALUMINUM





And now ~ a plant in Birmingham to serve the South



THE purchase of The Reeves Brothers Company plant in Birmingham, Alabama, which we are now operating in conjunction with our other plants in Chicago, Greenville, Pa., and Bridgeburg, Ont., increases our production facilities and enables us to serve the South from a convenient location. It also makes possible quicker delivery by water to the Pacific Coast and gives us an additional plant in which to fabricate export work.

This new plant is equipped to fabricate a number of steel plate products which we have not built to any great extent heretofore. They include Cylindrical tanks, Kilns, Creosoting cylinders, Retorts, Blast furnaces, Steel ladles and all kinds of steel plate equipment. We will be pleased to quote on any of these products for shipment from Birmingham or on any of the complete list of products shown below.

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New York	3113 Hudson Terminal Bldg.
Cleveland	2216 Union Trust Bldg.
Dallas	3308 Magnolia Bldg.
San Francisco	1040 Rialto Bldg.
Detroit	1510 Lafayette Bldg.
Philadelphia	1619 Jefferson Bldg.
Boston	1510 Consolidated Gas Bldg.

**Elevated Tanks . . . Storage Tanks . . . Standpipes . . . Cylindrical Tanks . . . Pressure Tanks
Acid Tanks . . . Kilns . . . Creosoting Cylinders . . . Tie Retorts . . . Smokestacks . . . Blast
Furnaces . . . Steel Ladles . . . Coke Ovens . . . Gas Holders . . . Hortonspheres . . . Riveted
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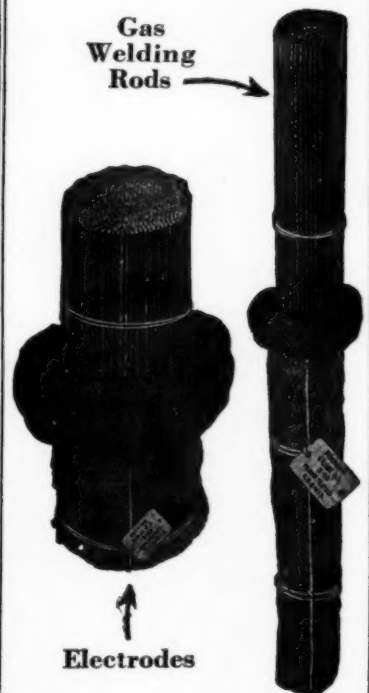
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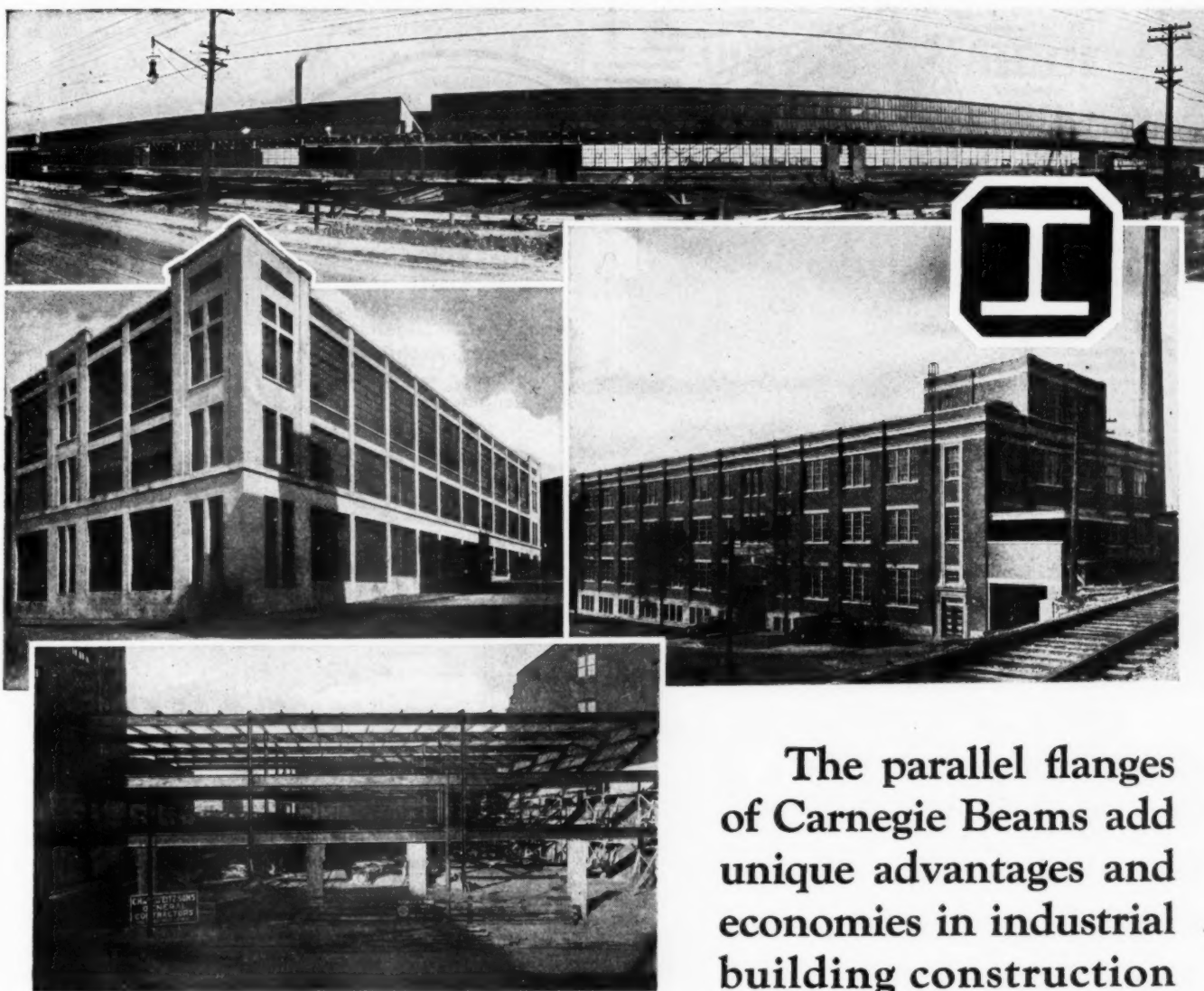
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The parallel flanges of Carnegie Beams add unique advantages and economies in industrial building construction

CARNEGIE BEAM SECTIONS are particularly adaptable to the construction of industrial buildings. Pictured above are several types of the many industrial buildings throughout the country in which these beams have been used with great economy and satisfaction.

A unique feature of Carnegie Beams is their parallel flanges. The elimination of internal flange slope provides eight non-sloping surfaces for connections instead of four, simplifying very markedly the great variety of connections usually required, such as special columns for cranes, crane girders, rail clamps, monorail tracks, brackets of all descrip-

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Neatness of construction and simplicity of detail characterize jobs fabricated of Carnegie Beams. These sections merit the investigation of those interested in efficient and economical construction of industrial buildings.

CARNEGIE STEEL COMPANY ❖ **PITTSBURGH, PA.**

Subsidiary of United States Steel Corporation

53

CARNEGIE BEAMS



Illustration shows work under construction on the hotel "The New Yorker", located on 8th Avenue, 34th to 35th Streets, New York City, which has been recently completed. Sugerman & Berger, Architects, Lange & Noska, Engineers.

STRUCTURAL STEEL
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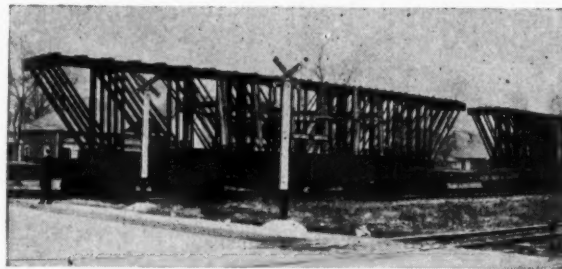
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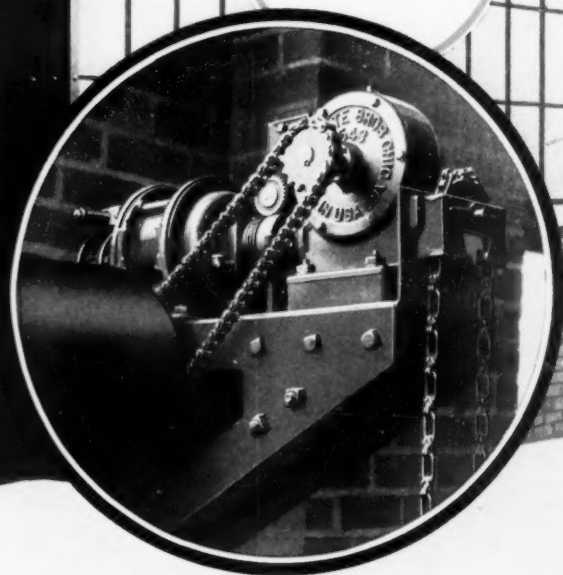
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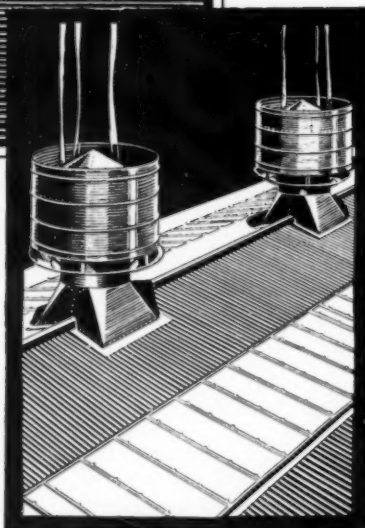
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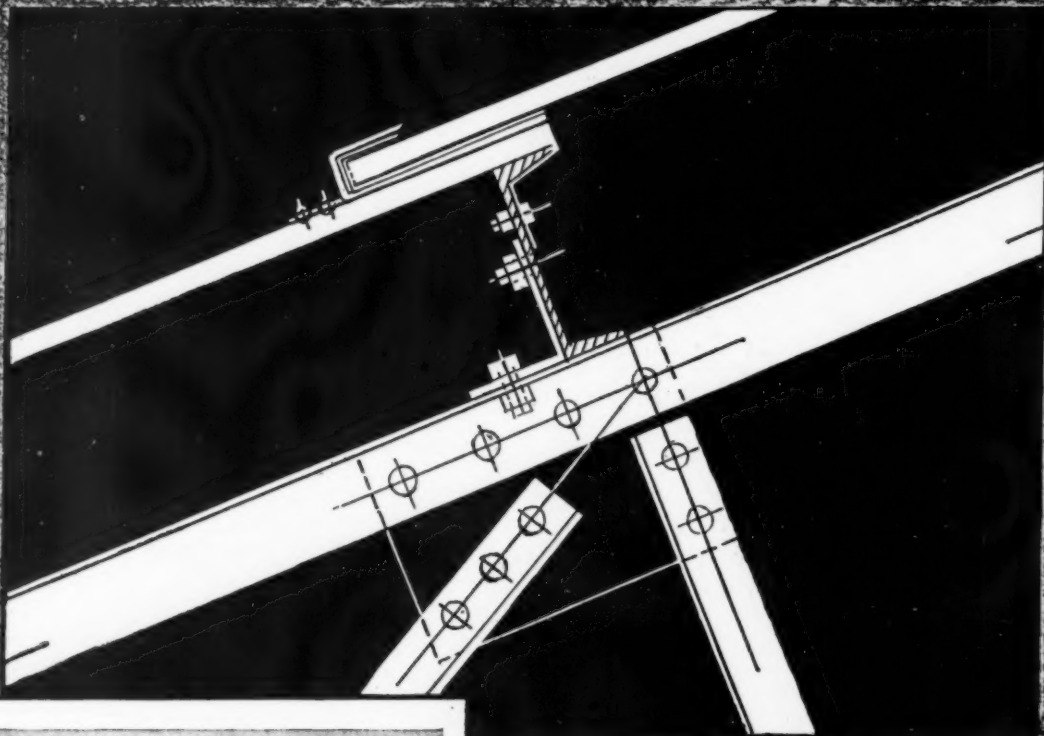
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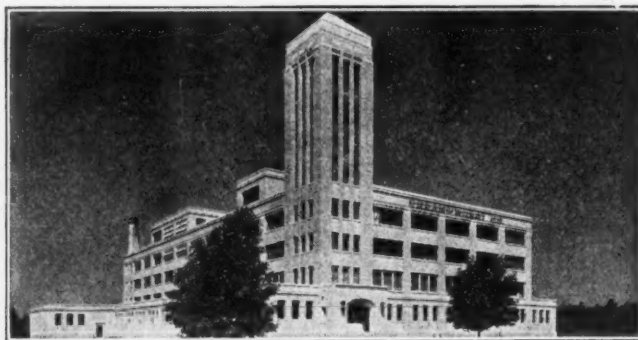
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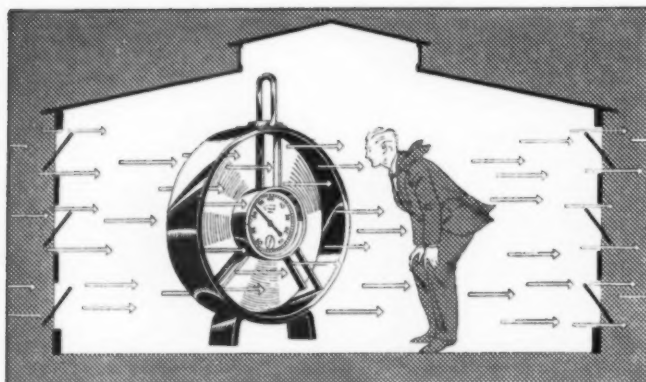


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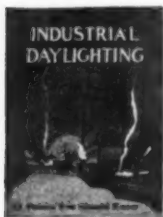


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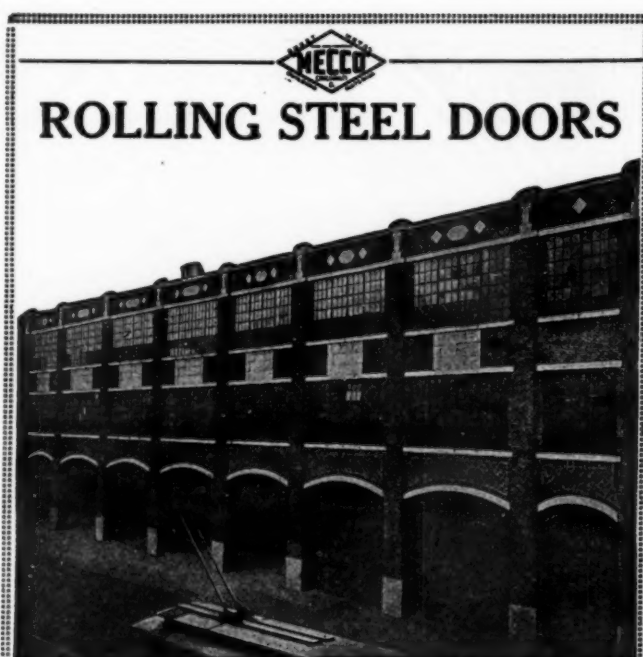
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"Mecco" Rolling Steel Doors of manual chain, crank or motor operation pass all the tests of actual service

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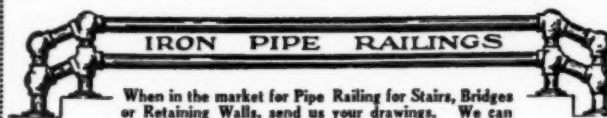
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It's not only *big* business, with costly products to sell, that knows the sales value of an attractive show room with decorative, modern-looking floors.

Smaller shops and stores, dealing in inexpensive commodities, have discovered the dollars and cents value of doing business in attractive, up-to-date surroundings. They have found colorful, resilient *Sealex* floors to be one of the least expensive ways to draw trade and give customers the impression of cleanliness, efficiency and prosperity.

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Sealex floors range from the inexpensive to the lux-

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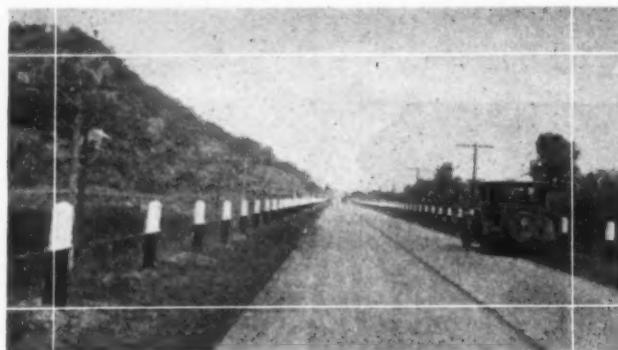
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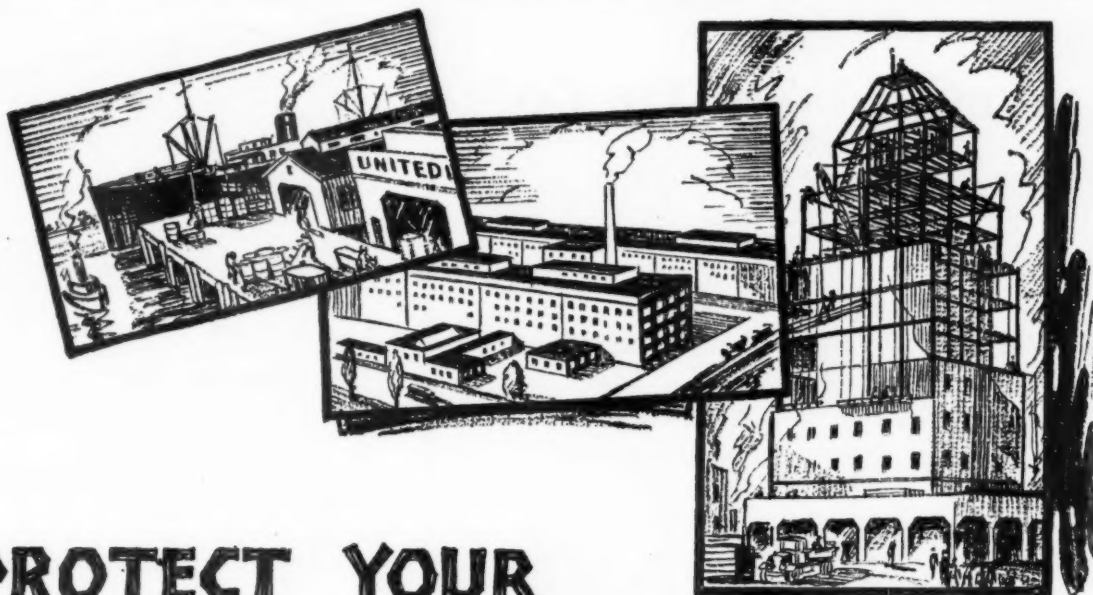
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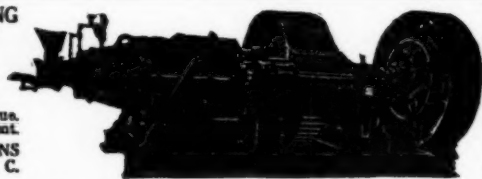
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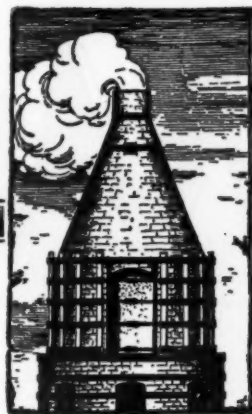
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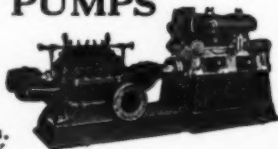


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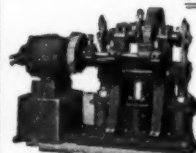
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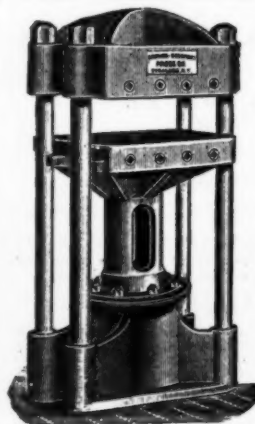
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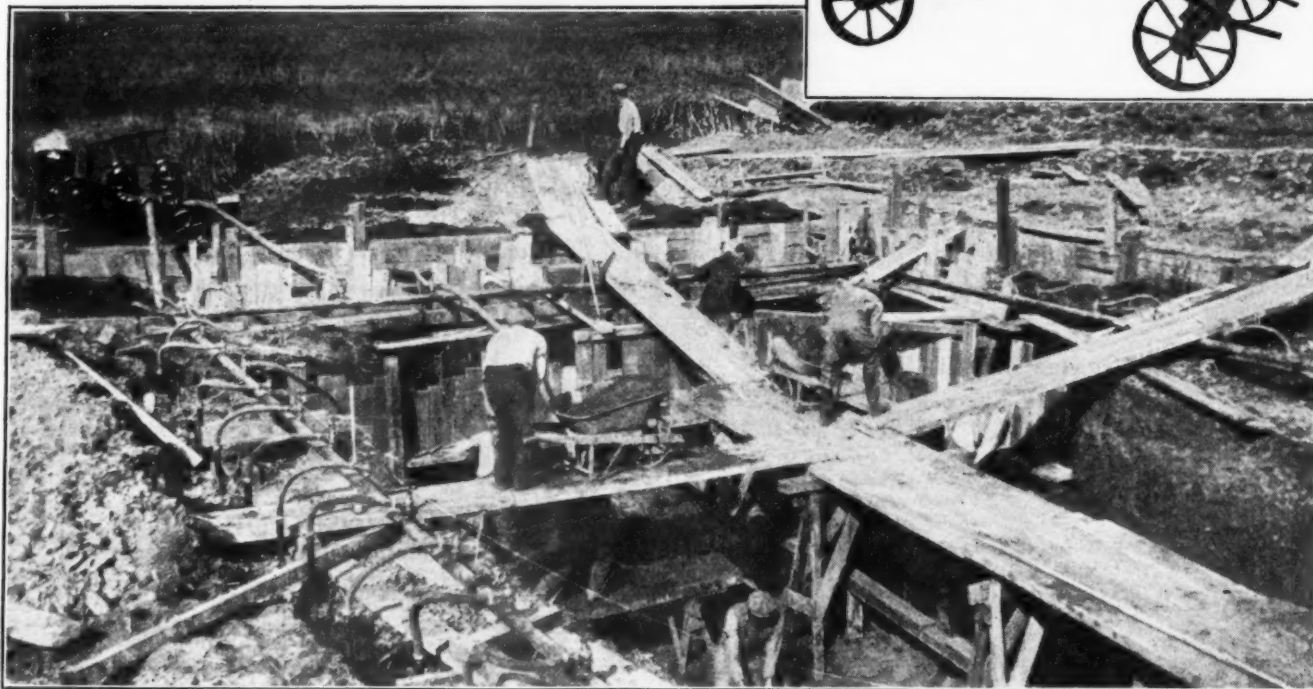
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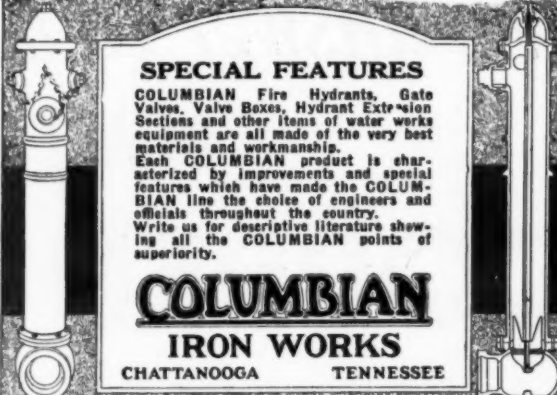
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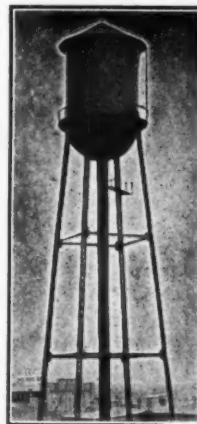
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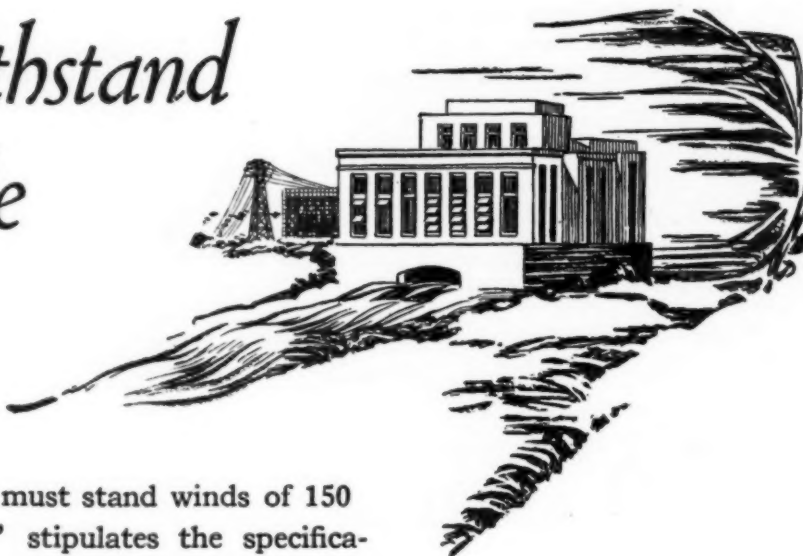
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October 17, 1929

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Gentlemen:

I am in receipt of your letter of October 14th and am amazed to learn that anyone should be ignorant of the work that the Manufacturers Record is doing. Your paper is alone in its field and I know of no other agency that is doing as much for the South. I believe it would be impossible to measure the benefit that the South as a whole receives from the Manufacturers Record and it deserves the support of everyone interested in the progress of this particular territory.

We use your paper in our business in many ways and find it invaluable not only as an advertising medium, but as a means of keeping in touch with the South's tremendous development.

I shall be very glad to have you use this letter in any way that you see fit and I can assure you that you have always had the loyal support of our entire organization.

Yours very truly,

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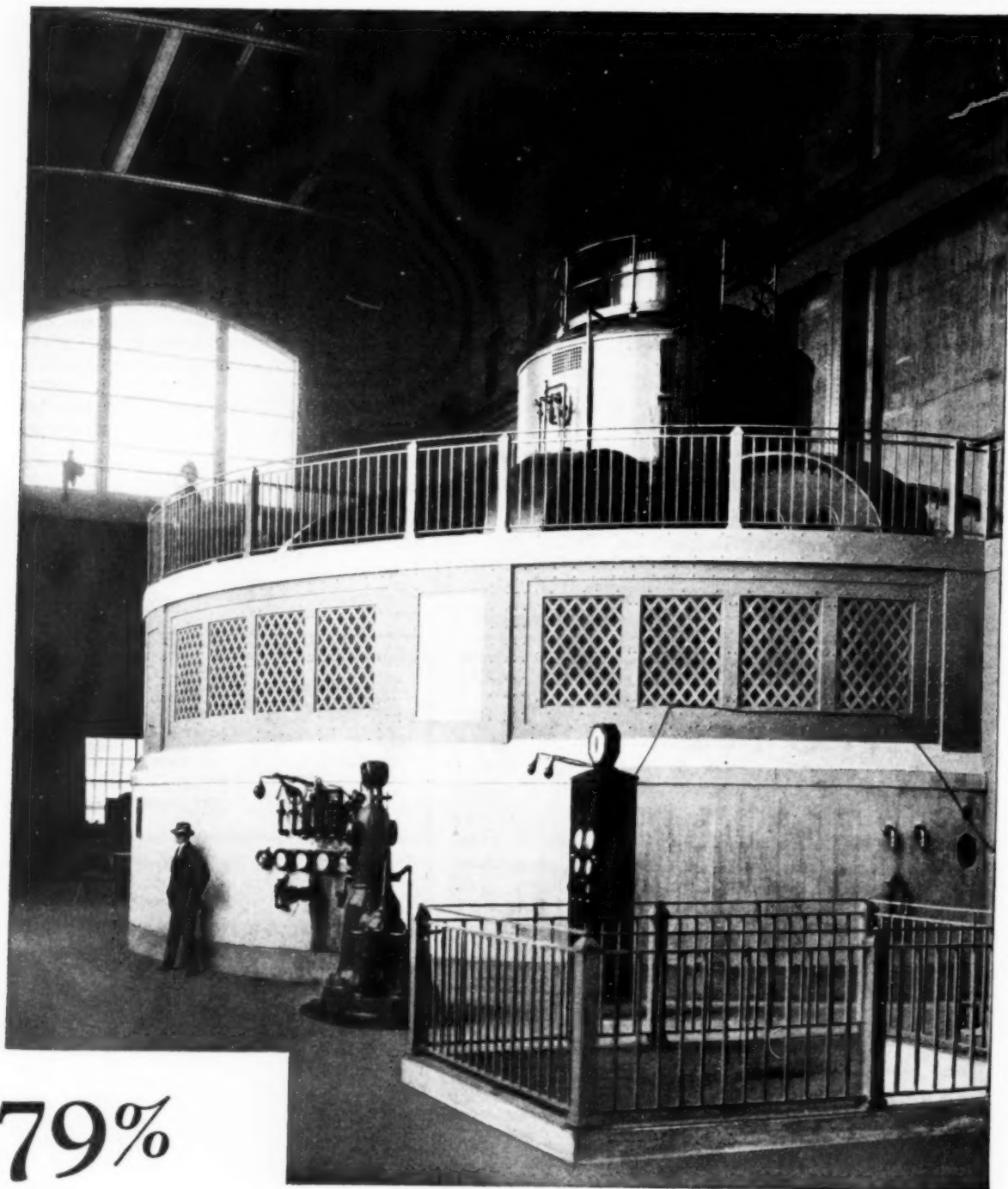
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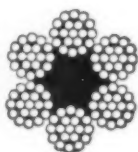
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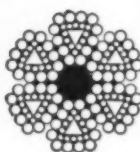
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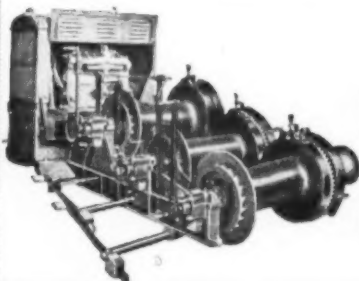
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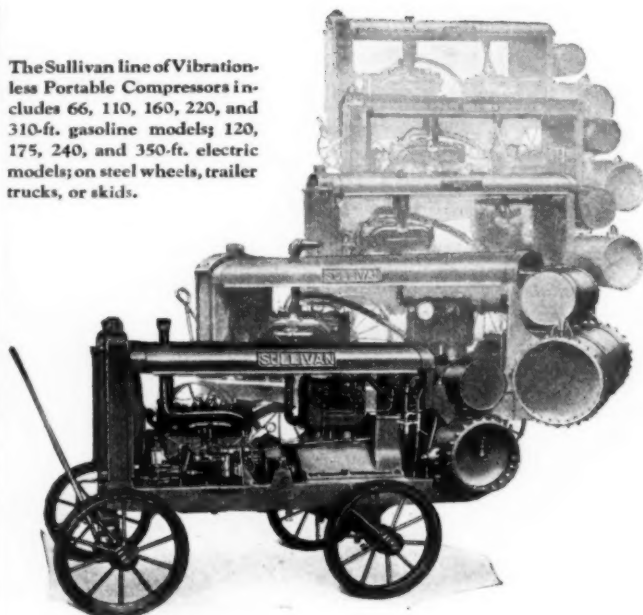
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Manufacturers Record

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EXPONENT OF AMERICA

Devoted to the Upbuilding of the Nation Through the Development
of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCVII No. 8 }
Weekly }

BALTIMORE, FEBRUARY 20, 1930

{ Single Copies, 20 Cents.
{ \$6.50 a Year.

Great Construction Activities of Wide Variety Covering the South

ONE of the most important contracts made in the South for many a long year is that of the Tennessee Coal, Iron & Railroad Company with the Southern Natural Gas Corporation by which the latter company contracts to furnish natural gas from Louisiana to the great plants of the Tennessee Company in the Birmingham district. This deal will place the Tennessee Company in an extremely strong, strategic position in the use of natural gas.

Natural gas is so invaluable as a fuel that the opening of the pipe line from the gas fields of Louisiana, estimated to be the greatest field in the world, to Birmingham, Atlanta and other points in the South will be of enormous value in stimulating further industrial development.

Between \$17,000,000 and \$20,000,000 will be expended at Gadsden, Ala., by the Gulf States Steel Co. in erecting new mills and enlarging others, it is now announced. Work completed last year and now under way involves the expenditure of \$10,000,000, principal units under construction being a blooming mill, universal plate mill and sheet mills. Four new open hearth furnaces, improvements to present furnace, 37 by-product coke ovens, opening new coal and ore mines, together with collateral improvements are provided for.

So many new things are developing in the South, so many great enterprises are being undertaken, so much highway work is under way that it is really impossible to give more than a mere glimpse at some of the high points of the construction enterprises reported in the MANUFACTURERS RECORD and in our *Daily Construction Bulletin* in the last week or ten days. Here, however, are a few of the more important undertakings, plans for which have recently been announced or for which contracts have been let.

Eight big water supply, irrigation and allied projects to be undertaken in Texas this year are estimated to involve the expenditure of \$35,000,000. Included are projects near Waco, Fort Worth, Brownwood, Abilene, Cotulla, Sweetwater, Corpus Christi, Mathis, Edinburg, San Angelo, Donna and Eagle Pass.

Hattiesburg, Miss., has started work on waterworks improvements to cost \$750,000. Clinton, Okla., voted \$600,000 waterworks bonds. High Point, N. C., will shortly sell \$1,500,000 bonds for water and sewer projects. Tulsa, Okla., voted \$1,300,000 bonds for sewer and water works.

Chesapeake & Potomac Telephone Co. will expend more than \$14,000,000 for improving its telephone facilities in Maryland and Virginia in 1930.

Directors of the Virginia Electric & Power Co., Richmond, approved an immediate construction program to involve an outlay of \$4,800,000, while other construction contemplated but not yet approved will bring the total expenditures for new construction this year to \$7,000,000.

Inland Steel Co., Chicago, has purchased the Wheelwright (Ky.) Mine of the Elkhorn Coal Corp., and will improve the plant and install additional equipment to bring the production up to 1,000,000 tons annually.

Blue Diamond Coal Co., Knoxville, Tenn., will expend \$1,000,000 in increasing the output of its Mayflower line at Bonny Blue, Va., to increase capacity to 1,500,000 tons a year.

Plans are being discussed for a sheet mill to be erected by the Tennessee Coal, Iron & Railroad Co., a United States Steel subsidiary, to use the continuous process. This new unit is in addition to expansion of other facilities now under way.

A \$1,500,000 municipally owned grain elevator is proposed at Houston, Tex.

Dredging contracts have been awarded in connection with the erection of a fertilizer plant for the Davison Chemical Co., Baltimore, at Houston, Tex., estimated to cost \$750,000.

General contract has been awarded for the first unit of a \$2,000,000 downtown parking garage in Baltimore for the St. Paul Garage Co.

The Greensboro (N. C.) Full-Fashioned Hosiery Mills are erecting a new unit to involve the expenditure of \$750,000, and provide work for 650 additional operatives.

Mexico Refractories Co., Mexico, Mo., are working on plans for a large fire brick plant.

The Chesapeake & Ohio Railway Co. has awarded contracts for 11,350 freight cars costing in excess of \$30,000,000.

The Texas Short Line, controlled by the Texas & Pacific Co., proposed to build an 11-mile line from Grand Saline to Van, Tex., while the St. Louis Southwestern Co. will build 17 miles in the same section.

The Texas-New Mexico Railroad, a subsidiary of the Texas

& Pacific Railway Co., has awarded a contract for a 70-mile extension to cost \$2,000,000.

The Union Depot Co. has been organized at Tulsa, Okla., to direct erection of a \$4,000,000 union depot.

Birmingham has voted \$1,000,000 bonds for a municipal airport and \$3,000,000 to finance sewer and drainage improvements.

Contracts have been awarded by the National Advisory Committee for Aeronautics, Washington, for a seaplane channel and wind tunnel at Langley Field, Va., estimated to cost over \$750,000.

Road, street and bridge work in the South may set a new high record this year. In addition to enlarged programs in practically every state, the counties, districts and municipalities will go forward with work of this character in volume, now that conditions in the bond market are favorable for the sale of such securities. Tulsa, Okla., will expend \$1,150,000 for grade separations and new streets. San Antonio proposes an election on \$5,000,000 bonds for paving, etc. Cameron County, Tex., will shortly sell \$1,000,000 bonds of a \$6,000,000 road issue. Brown County, Tex., will sell \$550,000 bonds for roads. West Virginia sold \$5,000,000 state highway bonds at a big premium.

Revised plans for construction of the \$12,000,000 Hero-Hackett bridge across the Mississippi River between New Orleans and Gretna, La., have been approved by the Secretary of War.

Contracts will shortly be let for an \$800,000 bridge over Curtis Creek for the City of Baltimore.

Plans are being prepared for the Texas & Pacific Railway Co. for a \$6,000,000 freight station and office building and a \$2,000,000 passenger station to be erected at Fort Worth.

Bids will be received March 5 for constructing a \$5,000,000 unit of the state capitol at Charleston, W. Va.

The City of Baltimore has tentative plans for a \$2,500,000 building program for city hospitals.

St. Louis Board of Education will award contracts in March for a \$1,500,000 vocational school building.

Contract has been awarded for extending and remodeling the Federal Building at Memphis, at a cost of \$1,000,000.

San Antonio has selected a site for a \$1,000,000 senior high school, plans for which are now being prepared.

John J. Harden, Inc., Oklahoma City, plans to erect 100 dwellings this year and various subdivisions at a cost of \$1,000,000.

Plans will be ready about March 1 for a Marine Hospital at Galveston, estimated to involve the expenditure of \$1,000,000.

The U. S. Veterans' Bureau awarded contract for a 250-bed, \$1,000,000 hospital at Lexington, Ky.

Healey Real Estate & Improvement Co., Atlanta, has awarded contracts for erection of a \$1,000,000 office building.

Swiss Plaza Co., San Antonio, proposes to begin work within 60 days on a \$1,000,000 apartment hotel.

The Westchester Co., Washington, D. C., has started work on two units of a proposed apartment group, each to comprise 100 suites in an eight-story structure.

National Building & Construction Co., St. Joseph, Mo., proposes an office structure to cost \$900,000.

General contract has been let for a \$750,000, 16-story office building for the Aviation Building Corp., Fort Worth, Tex.

Preliminary plans have been announced by Governor Caulfield, of Missouri, for a \$750,000 state reformatory.

Joplin, Mo., will hold an election February 25 on \$650,000 school bonds.

The Lubbock (Tex.) Board of Education opens bids March 4 for constructing a senior high school estimated to cost \$650,000.

Contracts will shortly be let for a \$525,000 post office building at Roanoke, Va.

VICTOR H. POWER

IT is with deep sorrow that we announce the death of Victor H. Power, First Vice-President of the MANUFACTURERS RECORD. Because of failing health Mr. Power had not been active in business for many months, and on February 12, at the age of 61, he passed away at the Johns Hopkins Hospital where he had been confined for several weeks with a serious heart ailment. He leaves a widow and one son, a student at Yale.

In 1893 Mr. Power entered the employ of the MANUFACTURERS RECORD as assistant bookkeeper. With tireless energy and devotion to work he made himself a valuable factor in all operations of the company, gradually advancing to the treasurership and then to the vice-presidency. An indefatigable worker himself, his lovable, kindly nature made him always considerate of others, always looking out for the comfort and health of fellow workers, and thoughtful to the extreme of all with whom he came in touch. It is difficult to describe his many characteristics without an appearance of exaggeration to those who did not know him, but no praise is too high, no commendation can be given which is not fully justified.

A native of Maryland, leaving school early in life, he became an inveterate student, widely read, and well informed. He was a man of unusual initiative and of tireless energy in mastering his work. Of him we may rightly say what was once said of another great character: Earth is the poorer because Victor H. Power has gone, and Heaven will be the richer because he has reached that home of eternal happiness. Mr. Power was a member of the Baptist Church and a devoted Christian worker, never shirking responsibility.

His fellow officers in the MANUFACTURERS RECORD, those who were associated with him for the past 37 years, and every employe in the office of the company or representing it in other parts of the country, mourn the loss of one whom they loved and honored.

RAPID DEVELOPMENT UNDER WAY IN CHINA

JULEAN B. ARNOLD, commercial attache of the American Legation in Peiping, in a recent statement in Houston, published in the Post Dispatch, stated that the Chinese are coming more and more to adopt the American standard of living, and are putting to greater use American inventions. "The greatest need of China," he added, "is transportation, but this is gradually being overcome through the erection of modern airports and motor highways. Even some of the interior provinces of China are constructing large airports and elaborate systems of highways when as yet they are not even served by railroads."

"The United States," said Mr. Arnold, "at present has the lead among the nations furnishing goods to China."

The development of China, with its 400,000,000 people, is one of the great problems of all time. What further betterment of the world will be brought about by the modernizing of China, the enlarged operations of its business interests, the higher wages which will inevitably come through this development, and what it will signify to all the world is difficult at present even to surmise, but it will mean a momentous change in world affairs.

THE WORK OF POWER COMPANIES FOR UPBUILDING THE SOUTH

WHEN Preston S. Arkwright, president of the Georgia Power Co., was called before the Federal Trade Commission recently to testify in the investigation the commission is making of public utilities, he made an admission of mistakes followed in the publicity methods of the power companies that should go far to clear the atmosphere of the suspicion created by the old methods and dispel the hesitancy the utility executives seem to have labored under since, and permit them to start on a wholly new and more wholesome campaign of publicity.

Mr. Arkwright's statements carry great weight because, from July 1, 1922, to June 30, 1924, he was a member of the executive committee of the National Electric Light Association; was then a vice president for four years, and during 1929, when the industry was being widely criticized, was president of the association. He is therefore probably better qualified to speak on this subject than any other one man.

Mr. Arkwright described the difficulties a public utility has in dealing with the public without arousing costly antagonisms, "in a business of this size, which has 23,000,000 customers—my own company has 140,000—it is impossible to deal with each customer as a separate, independent, personal transaction." Misunderstandings are bound to occur. "Men run for public office. * * * Antagonism to local public utilities * * * is an easy, ready-to-hand platform" and some political aspirants take it. The utilities had witnessed what happened to the railways a few years earlier, because of their refusal to explain their problems to the public. The power industry as a whole "was accused of secretiveness. * * * With the growing misunderstandings * * * the Association of National Utility Commissioners in their official proceedings suggested the companies should make known the facts. Many criticisms occurred in the newspapers. * * * Many statesmen, even including President Wilson, openly advised that the industry should engage in public relations activities."

"So," said Mr. Arkwright, "in 1920 the National Electric Light Association added to its activities the public relations national section."

From that point his testimony in the official records runs unbroken for 50 pages, giving an account of some of the publicity methods employed. Having traced the development of these activities "over the whole United States, through many companies, many subdivisions, many state information bureaus, many committees," he said, "I do not question at all that there have been mistakes made—I make them myself—I make them all the time, but the ultimate thing is whether the industry does a good job."

It is a pity the investigation did not bring out more of the really big things that might be lumped under what Mr. Arkwright called "a good job." He did say the industry "is doing a good job of increasing the supply of electric energy over widespread areas to more and more communities and more and more people for more and more purposes, to their economic advantage, and to their comfort and convenience, adding to their productive capacity and their output and their earning power and their living conditions."

But the investigation veered off to other phases of the industry, and no mention was made of the hundreds of millions of dollars that have been invested in the Southern states—all of them—as a direct result of the efforts of the power companies to increase the loads on their lines. Every major power company in the South has an industrial development department; and those departments comb the territories served by their lines to find industrial opportunities, and then send men out to interest manufacturers of other sections in their development. Thousands of men are at

work today in mills and factories, drawing regular wages, who would be jobless but for the aggressive work of the power companies in developing new industries. So effective have they been that the Niagara Hudson Power Company has adopted this policy, established an industrial development department and is going after new industries in true Southern style. If there is still unemployment in the South, how much worse it would be if the power companies had never exerted themselves to establish new factories!

No power company claims any particular credit for this sort of work, since it is undertaken frankly as a sound business policy, a policy which increases the electrical load and therefore the profits of the power company. **BUT THE SOUTH GETS THE BENEFIT, IN PAYROLLS AND LARGER BUYING POWER.**

The power industry should be judged, as Mr. Arkwright put it, "not by a few mistakes, but by its results as a whole"; and the creation of many new payrolls is a considerable part of the whole. It would be a calamity for the whole section if the activities of the Federal Trade Commission should result in curtailment of any phase of this development work. To the work of the power companies a very large percentage of the industrial development of the South is due, and now these companies—every one of them, we believe—is pushing out into the smaller towns and country districts, carrying the indescribable benefits of power and light into hitherto dark places, and adding enormously to the welfare and progress of all the people. It is in this light that the power companies of the South should be considered. They have been—and unless unwisely hampered will continue to be—a great power for the good of the whole South.

A GROWING MENACE TO DOMESTIC EMPLOYMENT AND INDUSTRY

WARNING the country against the migration of capital for the establishment in foreign countries of factories owned by Americans, Senator Grundy of Pennsylvania in an address in Philadelphia some time ago before the Manufacturers Club, called attention to the numerous corporations that are going abroad with their surplus capital and erecting factories, or purchasing existing plants "to some extent because there are available in foreign countries ample supplies of cheap labor." Senator Grundy said:

"From Europe they not only are supplying such foreign trade as they previously may have built up from their American mills, but they also are seeking to sell here, in competition with American industry and domestic labor, the products manufactured with their much cheaper labor abroad."

"The results are at least three-fold. In the first place, many of these corporations which previously were most active supporters of the protective tariff principle no longer have that interest."

"On the contrary, in many instances, because they are bidders for the American market from abroad, they actually are in the same position as the exporting foreign manufacturer, and, like the latter, now are opposed to a tariff which would adequately protect American industry and labor."

"Secondly, to the extent that they employ abroad, they have diminished the amount of employment that otherwise would have been available to American labor."

"Thirdly, to the extent that they can land competitive products here which have been made by foreign labor, and at a price advantage over similar domestic products, they diminish the demand for American labor by American mills and factories."

"By reason of the very economic facts which govern the situation, the battleground of domestic labor is right here in the highest wage country in the world; and the protective tariff is labor's fight in a way that it never has been before."

This warning is one which the American people need to heed. Henry Ford, for instance, has built a great plant in Ireland to make tractors, which he imports free of duty;

American manufacturers, when jute was put on the free list under the Underwood bill, moved their machinery to Calcutta in order to secure labor at 16c to 17c a day, and are shipping their products into this country free of all duty in competition with American interests and with the cotton growers of the South. Methods of this kind, if not prevented by a protective tariff, can be made to practically break down the labor market of this country and bring about a reduction of wages and of prosperity that would in the end be staggering.

This is one reason why the country should stand for a protective tariff; a tariff not only on the finished product, but a tariff on all the raw materials that enter into manufacture and which can be produced or developed in this country.

CLAYTON CLAIMS 22c PER POUND FOR COTTON NECESSARY FOR SUCCESS OF COTTON GROWER

W L. CLAYTON, of the cotton house of Anderson, Clayton & Co., Houston, Texas, with branches in other Southern cities and in New York, Boston and Los Angeles, in reply to an inquiry from the MANUFACTURERS RECORD as to the view he recently expressed that 22c per pound for cotton is necessary to the success of the cotton grower, writes:

"My statement was that 22c per pound for cotton is necessary if the farmer is to have a decent American standard of living. He also must have this price if he is to obtain a standard of living equivalent to his pre-war standard. I quote as follows from the testimony which I gave on December 14 before the Sub-Committee of the Agricultural Committee of the Senate investigating cotton prices:

"According to Secretary Hester of the New Orleans Cotton Exchange, the average market price of Middling 7/8-inch cotton for the ten years immediately preceding the World War was 11.60c.

"For the same ten years the average yield per acre, according to the United States Department of Agriculture, was 193 pounds. For the ten years succeeding the war the average yield per acre has been 156 pounds.

"The per-acre cost of producing cotton is almost unaffected by fluctuations in yield. It costs as much to produce 156 pounds of cotton on one acre as it does to produce 193 pounds on one acre. The gathering of 156 pounds is a little less costly than the gathering of 193 pounds. But the 156-pound yield was due mainly to boll-weevil depredations and soil depletion. Poison and the labor of its application added to the cost of production. More fertilizers had to be used. 193 pounds of cotton at 11.60c per pound gives a gross return of \$22.39 per acre. A gross return of \$22.39 per acre, with a yield of 156 pounds is equal to 14.35c per pound. 14.35c per pound would therefore be the equivalent of pre-war prices if costs of labor, farm machinery, taxes and all other things entering into farm life were the same as before the war, but \$1.00 today has the purchasing power of only 65c at pre-war prices. Hence 14.35c per pound pre-war, becomes 22.08c when converted into the purchasing power of money today. Therefore the cotton farmer, based on his post-war yields per acre, on the average price of cotton for ten years prior to the war, and on the present purchasing power of the dollar, must obtain 22.08c per pound for his cotton today if he is to maintain even his pre-war standard of living. It is well known that the post-war standard of living of industrial workers is considerably higher than pre-war standards. Labor as a whole receives today about 100 per cent increased money wages over the ten-year period immediately prior to the World War. Labor is the biggest item in the cost of cotton production."

As Mr. Clayton is widely known in this country and abroad as one of foremost cotton handlers of the world, his company being members of the New York Cotton Exchange and the New Orleans Cotton Exchange and associate members of the Liverpool Cotton Association, his views on this subject and the details he gives in backing up his views are extremely important.

SOUTHERN SENATORS BREAKING AWAY FROM FREE TRADE

SOUTHERN Democrats in the Senate appear to be breaking away from the old, free-trade fetish, but the break comes hard and results in some queer antics. The two Louisiana Senators, Ransdell and Broussard, are the only ones who so far have been consistent. They are the only Southern Democratic Senators who, on three important schedules recently, voted for protection as they always do.

On cement, Senator McKellar of Tennessee joined them in a vote for protection, possibly because of large cement plants in his state. Senators from Virginia, Florida, Georgia and Alabama, in which there are large cement interests suffering from foreign importations, might be expected to vote for any measure designed to stimulate industries and increase employment; but not so. Yet the cement industries of these states are important.

On rayon, fourteen Southern Senators—Democrats all—voted for a high tariff, and yet a high tariff on rayon is probably less needed than on cement, cotton and dozens of other products of the South.

When coal tar dyes and other coal tar products came up for a vote, 15 Southern Democratic Senators voted for its protection, but only nine of them had voted for protection on rayon, and only two had stood for a tariff on cement, Ransdell and Broussard.

The fact that within a single week 20 Southern Democratic Senators voted for protection is powerfully significant. The South is breaking away from its old, free trade traditions. With men who have gone on record time and again for the principle of free trade, the break comes hard. Senator George, of Georgia, for example, is believed by some of the other Senators to be convinced of the necessity of protection for Southern industries, but finds himself so strongly committed to free trade that he hasn't yet broken away. Probably a good many Southern Senators are in the same embarrassing fix; but that is only conjecture, based on the growing demand of Southern agriculture, mining and industry for the protection of their jobs and investments. The voice of Southern agriculture along with agriculture of the rest of the nation was added to that of labor when, in an open letter to the Senate demanding a tariff on farm products, the American Cotton Growers Exchange joined with the American Farm Bureau Federation, the Farmers Educational and Cooperative Union of America, the National Cooperative Milk Producers' Federation, the American National Livestock Association and the Central Livestock Cooperative Association of St. Paul, Minn. The Legislature of a Southern state recently broke all tradition by passing a resolution urging a tariff on cotton.

The Southern Senators voting on the three tariff schedules listed were recorded as follows:

For protection on all three counts:

Ransdell, Louisiana. Broussard, Louisiana.

For protection on cement, in addition to Ransdell and Broussard, McKellar of Tennessee.

For protection on rayon and dyes, but opposed on cement:

Brock, Tennessee.	Heflin, Alabama.
Broussard, Louisiana.	Ransdell, Louisiana.
Glass, Virginia.	Swanson, Virginia.
Harrison, Mississippi.	Trammell, Florida.
	Tydings, Maryland.

For protection on rayon, but opposed on dyes:

Connally, Texas.	Simmons, North Carolina.
Harris, Georgia.	McKellar, Tennessee.
	Overman, Kentucky.

For protection on dyes but opposed on rayon were:

Barkley, Kentucky.	McKellar, Tennessee.
Fletcher, Florida.	Steck, Louisiana.
Hawes, Missouri.	Stephens, Mississippi.

This takes no account of those Senators who opposed protection on all three schedules.

New Englander Commends Southern Civilization and Advises the South to Maintain It

[Conrad Roser, of Glastonbury, Conn., after a four-year experience of living in the South, has volunteered the following extremely interesting article in regard to the civilization of the South and the importance of the South building from within and depending to as large an extent as possible upon its own people and its own resources for increasing prosperity and for the maintenance of that civilization which he regards not only as vitally important to the South, but to the country at large.—Editor MANUFACTURERS RECORD.]

By CONRAD ROSER, Glastonbury, Conn.

EVERY once in a while one reads a bit of writing which goes to great pains to try to prove that the South has never contributed anything to the real advancement of civilization. In the Outlook of recent issue in an article, "No More Swords and Roses," the writer goes so far as to state that, in his opinion, the South never would contribute much, possibly never amount to anything, until it adopted the standards of New England. I am a New Englander, but after having lived here a year following four years in the South, I feel that the South can make its best contribution to the world by developing its own standards and civilization. To me:

The greatest asset the South possesses is the conviction of its men and women that they can best help themselves, the South and the country by developing and evolving in every way from within, and the courage with which they pursue this conviction.

In 1874, when Southerners were suffering as terrible tests and strains as any civilized people ever had to suffer, Lucius Q. C. Lamar of Mississippi, in his tribute to the late Sumner, said, "The South, prostrated, exhausted, drained of her life blood, as well as of her material resources, yet still honorable and true, accepts without reservation the bitter award of bloody arbitrament, resolutely determined to abide by the result with chivalrous fidelity; yet, as if struck dumb by the magnitude of her reverses, she suffers on in silence."

Today, the South, in the greatest "comeback" of a people in history, is tempering its material growth with the same fine qualities of character, making for balance and sanity. All thinkers agree that the tremendous scientific advances of the past years demonstrate clearly that the world's greatest need is the guidance and moderating influence of men and women of character. For its particular problems, the South has been and is now fortunate in having strong leaders in emphasizing those intangible things which carry people through times of stress and also growth, to develop eventually a well-balanced civilization.

The material growth of the South has been evolutionary and healthy. True it

is that outside capital and business leadership has contributed much, but almost always its coming has been of mutual benefit. Likewise is it true that considerable growth has been of an exploitive nature. Painful transitions have taken place, extremes in standards of living are still prevalent, stability is not yet a fact and often judgment is far from sane. However, considering extremely rapid growth and the change from an agricultural people to one in a great measure industrial, growth has been unusually sound and healthy. Strikes have been practically nil in home owned industries, increases in prosperity have not brought about a loss in sense of values; there seems to be a genuine feeling of community and section pride in all individual and group achievement. Men and women of character have brought about this development.

The South has been accused of being a desert of the fine arts where beauty is not appreciated. These accusations surely must have been made by those who never have had the privilege of admiring the surpassing beauty of the Southern women. Appreciation of fine things and beauty is more real than apparent in the South. That it was always real is evidenced by the fine architecture, homes and gardens of the old South, and by many a cherished box, bush, tree or flower where circumstances prevented more. With increase in prosperity, this appreciation of the beautiful becomes more apparent; architecture, homes, grounds, home sections and cities are not only beautiful but in good taste. Most of all, they have charm because they are not superficial display but the life and love of the people.

Then, too, in matters of religion, Southerners have been called fundamentalistic and narrow minded. They have been called emotional rather than intellectual. In seeming to cling to some of their views, have they not been holding to a few eternal truths and faiths waiting to better understand before moving on? Is this not better than the other extreme, interpreting all things by pure logic only, with a sophisticated lack of emotion? In the end will not this reasoning lead to a better balanced religion?

One of the most frequent accusations

thrust at the South is that of laziness, a seeming lack of concern. Strongest evidence of this attitude towards work is the fact that Southern people have been heard telling others that they cannot do a certain thing, at least they have never had occasion to try. For example, a man may have said that he never has shaved himself. He is not proud of the fact, but his sense of humor overcomes him on the discovery that somehow he never has shaved and he laughs because he knows that the joke is on him. A sense of humor, sincerity and lack of show are fine attributes and cannot be called laziness.

The affectionate family life and the enjoyment of simple social contact with his fellowman is a better foundation upon which to build a civilization than the suggested method of going elsewhere and adopting standards. The Southerner is capable to a high degree of enjoying the society of his fellows. This is as it should be, as simple pleasures are best. As a result Southern life is charming, cheerful, unsophisticated and natural, does not run to extremes. Women are surrounded by a genuine glow and protection of chivalrous attention and respect that is a delight to both man and woman. Happiness is common because people enjoy one another not for what one's forebears were or one may be but for what one is worth as good company. Least of all does this mean that the Southerner does not become concerned; he does, he strives seriously, but goes about trying to accomplish his result without making himself or all others any more unhappy than is necessary.

The South does not need to go elsewhere for its standards. It needs to develop its own civilization and is doing so. If, as its material prosperity increases, it continues to temper it with the same leadership of its men and women, if its excess energies and its work are applied to the appreciation of beauty, if its personal life continues as spiritually sound and its social life as wholesome and simple, then, it will have contributed more than many fine things, written, spoken or otherwise expressed, for it will be a living example of that balanced civilization the world so sorely needs.

\$20,000,000 Expansion for Gulf States Steel

New Units Provide for Further Diversification in Output of South's Largest Independent Steel Company—Wide Range of Products Already Turned Out. Blooming Mill, Universal Plate Mill and Sheet Mills Important Units Now Under Way to Be Completed by July.



View of New Plate Mill Which When Completed Will Have a Monthly Capacity of 20,000 Tons.

W H. COVERDALE, president of the Gulf States Steel Co., officially announces details of plans for expending \$17,000,000 to \$20,000,000 for additions to its Gadsden steel mills, the entire program to be completed in less than three years. A \$2,000,000 plate mill is now being completed, a \$1,000,000 blooming mill is being installed, and general contract has been let to F. H. McGraw & Co., New York City, for a \$2,500,000 sheet mill. In addition to these finishing mills the company has authorized construction of four open-hearth steel furnaces of 125 tons capacity each, 37 by-product coke ovens, a 500-ton blast furnace, duplication of a power plant which was completed last year at an estimated cost of \$3,500,000, and opening new coal and ore mines.

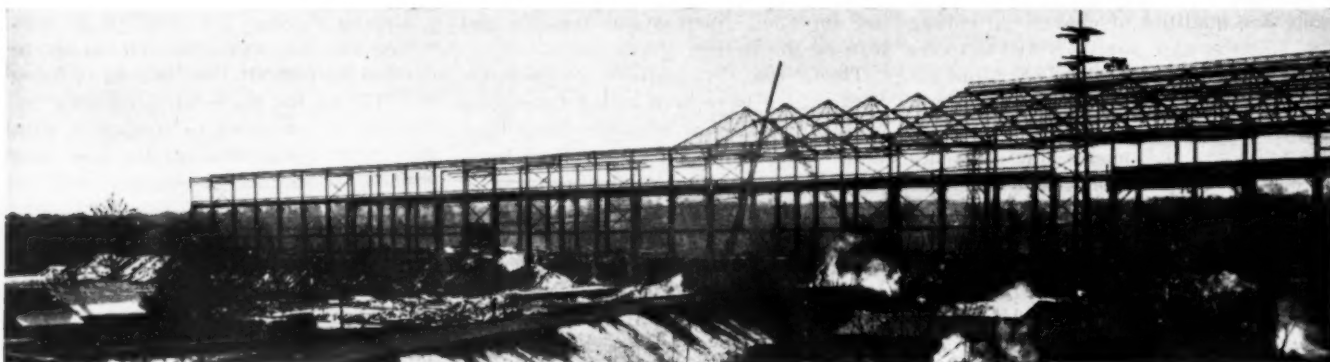
The official statement followed a conference attended by Mr. Coverdale, L. R. Powell, president of the Seaboard Air Line Railroad; L. E. Geohegan, vice-president and general manager of the Gulf States Steel Co. Confirmation of the announcement was given to the MANU-

FACTURERS RECORD in a telegram from Mr. Geohegan. The City Council and the County Board of Revenue met last Friday to confer on plans for providing additional roads and streets to the site, which was considerably enlarged recently by the purchase of several hundred acres

of land. They also considered bus and electric railway transportation facilities that will be required for the large number of additional employees to be engaged when improvements now under way and scheduled are completed.

It is announced that more than \$12,000,000 will be expended for doubling the raw steel and coke output of the plant. New stoves will be added to the blast furnace which was completed last year. The sheet mill which is to start up shortly will turn out about 7,000 tons monthly. It is expected, however, that business will be developed in sufficient volume to make necessary the building of two other units of like size within the next two years to bring the total capacity to 21,000 tons a month.

Mr. Coverdale pointed out that the



Track Fill and Steel Superstructure of Plate Mill, to Produce Universal Plates up to 48 Inches Wide and Sheared Plates up to 72 Inches in Width.



WILLIAM HUGH COVERDALE,
President, Gulf States Steel
Company.

Tennessee, Alabama and Georgia Railway, bought last year, and which is being rebuilt to handle the heaviest traffic, is doing a satisfactory business.

Reports circulated last week that control of the Gulf States Steel Co. had been acquired by the Cyrus Eaton interests of Cleveland, Ohio, were emphatically denied by Mr. Coverdale. "The report from New York that the Gulf States Steel Co. has been sold to the Eaton, or any other interests, is absolutely untrue. How could it have been sold when the stock is widely scattered and there has been no meeting of stockholders to consider the matter?" he is quoted as saying. "There has been a suggestion of a merger with the Republic Steel Corp., but it has not been seriously entertained by our company. In addition to that, the bylaws of the company provide that only three new directors are to be elected

each year, and it would take at least three years for a new board to transfer the control."

The following review of expansion activities of the Gulf States Steel Co. was prepared several weeks ago exclusively for the MANUFACTURERS RECORD, to present in an authoritative manner details of important construction work completed recently, under way and proposed by that independent steel producer. At the time the article was written an expenditure of \$5,000,000 to \$6,000,000 was estimated for extensions scheduled for completion by July, 1930.

The home office of Gulf States Steel is in Birmingham, and the development, as indicated by the accompanying photographs, is under construction at Gadsden, approximately 56 miles northeast of Birmingham, in the heart of the greatest mineral district in the South and one of the most important in the country.

William H. Coverdale, president of the company, has just made an inspection of the work under construction, in company with Leslie E. Geohegan, vice-president and general manager. Mr. Coverdale maintains headquarters in New York City and Mr. Geohegan, who is actively in charge of plant operations, has his offices at the headquarters of the company in Birmingham.

The Gulf States Steel Company was formed in 1913 and is a reorganization of the old Southern Iron & Steel Company. Nothing but memories are alive today to associate the present, progressive and much larger company with its predecessor. It is one of the few self-contained units in the steel industry, owning and operating its own ore and coal mines, by-product coke plant, blast and open hearth furnaces, blooming bar rod and wire mills.

Every process and practice of mining and manufacturing are under its own control. Its range of products at present includes ingots, billets, slabs, bars, angles, channels, wire rods, plain and barb wire of all kinds, nails, staples,



LESLIE E. GEOHEGAN,
Vice-President and General Manager,
Gulf States Steel Company.

bale ties and woven wire fencing. To this will be added upon completion of the present program a range of plates up to 72 inches sheared and 48 inch universal plates and sheets.

Principal units under construction are a blooming mill, universal plate mill and sheet mills. New open hearths and extension of the present ones will be required to furnish the increase in steel necessary. Many minor and collateral improvements are also under way.

The three new mills incorporate certain features unique in connection with the design of mills of these types and they are expected to show exceptional results in tonnage rolled and in accuracy attained in rolling.

The Blooming Mill

The 40-inch blooming mill will be an extremely heavy, rugged mill, built by the United Engineering & Foundry Com-



Blooming Mill Yard Crane Runway, With Improvements Recently Made.

pany. Steel is used throughout, including roller tables and manipulators. In design, so far as strength is concerned, it is practically the same as a modern 44-inch mill.

All bearings in the roller tables are roller bearings, except for the main reversing tables which have bronze bearings; also all the gears run in oil. Two double manipulators are being supplied, one pair for each side of the mill, with tilting fingers for turning the ingot installed on the manipulator between the mill and the pits.

The main mill motor can deliver 7000 horsepower continuously and has a capacity for over loads up to 19,000 horsepower. This motor can be reversed from full speed to full speed in less than four seconds. When operating at full speed the delivery of the piece in the rolls is at the rate of about 1100 feet per minute.

Main motor is driven by a four-unit motor-generator set consisting of an alternating current motor, a heavy steel plate flywheel and two 700-volt direct current generators all mounted on one rolled steel bed plate and all coupled together. This is located in the main motor room.

Soaking Pits Modern in Design

Two new rows of 64-inch by 14-foot soaking pits are being built, each row having four holes and each hole being of ample capacity for ten 18-inch by 20-inch ingots, thus providing a total additional pit capacity of 80 ingots. The new pits will be of modern design, equipped with Isley control system for regulating gas and air. The pits were designed by the James Criswell Company in Pittsburgh.

The New Plate Mill

Top and bottom rolls of the new plate mill will be 32 inches in diameter by 90 inches long and the middle roll 22 inches in diameter by 90 inches long. The mill will roll universal plates up to 48 inches wide and down to 1/8-inch thick. It will roll sheared plates up to 72 inches wide after shearing, with a minimum thickness of about 3/16-inch. The longest universal plate that can be shipped will be about 70 feet, the narrowest 8 inches wide. This mill is being built by the Mackintosh-Hemphill Company, Pittsburgh, and will have an initial capacity of 20,000 tons monthly.

The mill will be served by two end charged, side discharged furnaces, each accommodating 58 feet of slabs, and designed by the James Criswell Company.

Main motor is 4000-horsepower, direct current, driven by a motor-generator set with flywheel, similar to the drive for the blooming mill but smaller in size. This is the first application of a direct-connected blooming mill type direct current motor to a three-high plate mill and

was determined upon for the purpose of making quick changes in the speed of the main mill when necessary.

Tilting tables are arranged so they may be moved close to the mill when rolling sheared plates, and back to clear the vertical rolls when rolling universal plates.

The hot bed is being built 72 feet long for the present, but provision is made for an addition to the length in future to practically double its size.

Two plate shears are being installed, one to cut the plates to length and the other for shearing to width. A distributing building is being erected across the end of the main plate mill building for shipping sheared and universal plates.

Farrell Issues Call for Seventeenth Foreign Trade Convention

"The outstanding feature of American foreign trade is the increased sale abroad (by more than 12 per cent last year) of the products of our manufacture," declared James A. Farrell, chairman of the National Foreign Trade Council, in issuing the call for the Seventeenth National Foreign Trade Convention, to be held in Los Angeles on May 21-23. About 2,000 foreign traders from all parts of the country are expected to be present.

It is noteworthy that our exports of finished manufactures have recuperated promptly from the recent temporary uncertainty in American industry, reports Mr. Farrell.

Business delegates from many countries of the Far East and Latin America will attend the convention and special arrangements are being made for promotion of informal contact with these direct representatives from the outstanding fields of American foreign trade growth.

South to Hold First International Naval Stores Conference

A strong list of speakers will address the international naval stores conference when it meets February 24-26 at Jacksonville, Fla. This will be the first international conference of the naval stores industry ever to assemble in this country, and has been arranged by the untiring efforts of the Pine Institute of America. Dr. Julius Klein, Assistant Secretary of Commerce, will discuss "The New South." Dr. Klein has recently expressed hearty approval of the plan of regional cooperation that has proved so successful in New England, and has recommended its adoption by other parts of the country. Dr. Hugh

Final plans for the sheet mills are near completion and contracts will be let in the near future. They will be built in three units, with an initial capacity of approximately 9000 tons monthly of various kinds of sheets, galvanized, black and blue annealed. Both crimped and corrugated roofing and sliding will be produced, also the finer quality of full finished sheets for manufacturing purposes.

The Gulf States Steel Company is now the largest independent steel manufacturer in the South and has evidenced its faith in this growing section of the country by the expenditure of approximately \$10,000,000 in the last two years, including the program under way.

P. Baker, manager of the trade association department of the Chamber of Commerce of the United States will define the place of the trade association in our industrial structure. Major R. Y. Stuart, Chief of the Forest Service and Dr. H. G. Knight, Chief of the Bureau of Chemistry and Soils, will discuss perpetual forest operations and the soils of the turpentine belt, respectively. Dr. Charles H. Herty, consultant of the Pine Institute and long an authority on naval stores, and Dr. E. R. Weidlein, Director of the Mellon Institute, which has been conducting research on turpentine, will discuss phases of the industry from the viewpoint of the chemist. C. C. Concanon, Chief of the Chemical Division, Bureau of Foreign and Domestic Commerce, Consul Memminger of Bordeaux, and Dr. F. P. Veitch, director of the naval stores activities of the Department of Agriculture, are other speakers.

Brazilian Iron Ores Reported Under Option to Americans

Referring to the report that the United States Steel Corporation had purchased large iron ore properties in Brazil recently, widely published, we are advised by the Steel Corporation that the report is incorrect. A leading American engineer who in times past has been intimately identified with the operations of the Steel Corporation wires the MANUFACTURERS RECORD as follows:

"Many years ago the Steel Corporation had options on many of the Brazilian ore deposits, which are considered very wonderful. They let the option lapse and I understand that more recently they passed into the hands of Charles K. Leith, the geologist, and his associates."

From other sources we have been advised that a corps of engineers are on the ground investigating the extent of these deposits, which are reported as very large.

Goodyear Tire & Rubber Co. Concentrating Tire and Fabric Plants in the South

Rapid Construction Featured Erection of the Plant at Gadsden

A YEAR ago, on February 7, ground was broken for the mammoth tire plant of the Goodyear Tire & Rubber Company at Gadsden, Ala., the first of four similar units to involve an ultimate expenditure of \$30,000,000. At that time a group of civic representatives and Goodyear officials gathered at the plant site, and within this 12-month period great changes have been wrought and vast sums spent in converting a water-soaked cotton field into modern industrial grounds. Winter-grass and evergreens have erased the recent construction scars.

Working under adverse weather conditions, A. K. Adams & Company of At-

lanta, builders of the plant, erected the buildings with a speed that has made construction history. Robert & Company of Atlanta, supervising architects, had much to do with the dispatch with which the work went forward. A mill village of 300 houses with all modern conveniences for employes of this enterprise is a related development.

Four months and 19 days after ground was broken at the factory site a carload of 1400 tires was shipped from Gadsden. Production has been increased until the plant has an output of 5000 tires daily. Shortly after construction on the tire plant was started, work was begun on a reclaiming plant, estimated to have involved the expendi-

ture of \$1,000,000; it began production on September 20 and now has an output of 50,000 pounds per day.

Under Southern skies Goodyear's flag now flies over four big industrial plants. In addition to the tire factory and reclaiming plant at Gadsden, the company has three textile mills in Georgia. Cedartown, Rockmart and Cartersville each has a 50,000-spindle mill owned and operated by Goodyear.

Building a tire factory with beautifully landscaped grounds, construction of a reclaiming plant, erection of an airship dock, manufacture of almost 750,000 automobile tires, production of 2,500,000 pounds of reclaimed rubber where formerly was a muddy cotton field, these are the Goodyear accomplishments within the past year at Gadsden.



Left—This Mill at Atco, near Cartersville, Ga., Purchased From the American Textile Co., Was Enlarged Last Year to 50,000 Spindles, and 89 Operatives' Dwellings Were Erected.

Right—\$7,500,000 Tire Plant, the First of Four Similar Units to be Constructed at Gadsden Ala. The Initial Unit, Built in Record Time, is Now Producing 5,000 Tires Daily.



Left — Rockmart, Ga., Mill, a 50,000-Spindle Enterprise, Was Completed Last Year Along With 300 Modern Houses for Operatives.

Metallic Mineral Industries in North Carolina

By H. J. BRYSON, State Geologist, Raleigh.

Part I, on "North Carolina's Mining and Quarrying Industries," by Mr. Bryson, appeared in the MANUFACTURERS RECORD of November 14, 1929

Part II—Mineral Products

IN THE past few months much interest has been manifested in development of the metallic mineral industry in North Carolina, chief interest being in copper and gold. Large companies such as the Anaconda Copper; American Smelting & Refining; U. S. Smelting, Mining & Refining; Tennessee Copper; Ducktown Chemical & Iron Company have had engineers and geologists in the field for some time.

Gold

A great revival of interest has taken place in gold mining, the most important deposit investigated so far being the Black Ankle Mine in the Central Huronian belt in Montgomery County, property owned by Ed. Hedrick of Asheboro. The gold occurs in a free state. Formations consist of schists, which are argillaceous with a siliceous tendency, light colored and rather soft. These schists or slates are penetrated by numerous seams of quartz, which generally seem to have the effect of enriching the ore body, as the richest portion is where the quartz is most abundant. It is difficult to say where the vein matter is found as rocks of the entire region are gold-bearing, as well as the so-called veins. The ore occurs in "zones" rather than in veins.

Development of the property has been confined to an area 600 by 150 feet and 52 feet deep. Mr. Hedrick states that the whole area contains gold in varying amounts, that a New York company

made flattering offers for the property but he has refused to dispose of it.

Overburden is removed by wheel scrapes drawn by crawler type tractor. A small test mill, consisting of hopper, log washer or disintegrator, two classifiers, tube mill, sluice boxes, riffles, and amalgamation plates, has been built. Several tons of ore has been run through the mill with an average recover of \$30 per ton; about 25 pounds of gold has been recovered. This mill, however, does not recover all the gold as the tailings have shown as high as \$26 per ton in gold. Mr. Hedrick and associates are enthusiastic about possibilities of the property.

The old Howie Mine in Union County has been taken over by the Condor Con-

solidated Mines, Ltd., Toronto, Canada. The North Carolina company is known as the Jackson Gold Mining Company of Waxhaw, N. C. Chas. B. Wyett, auditor, stated that members of the company met recently at Waxhaw and completed plans to begin aggressive operations at once. Gold occurs in a free state in a rather hard siliceous slate. Ore body is said to be 400 feet wide and fully a mile long, the deepest shaft about 300 feet deep. Ore as a whole is low grade but at times runs as high as \$30 per ton; the average, however, is much lower.

Another district in which there has been considerable interest is the Northeast belt in vicinity of the old Portis Mine. Two companies are interested in the Long and Portis properties and a small ten-stamp mill has been erected on the Long property. Gold occurs in free state in clays and gravels of the area. Investigations over 40 acres show an average gold content of close to \$5 per ton to an average depth of 10 feet. The hydraulic method is used. Coarse quartz and gravel is screened out and run through the stamp mill; gold is caught in riffles and on amalgamation plates.

Copper

The copper belts of Ashe, Jackson and Swain counties offer great possibilities and the Fontana Mine in Swain County produced last year 8,207,000 pounds of copper. It is said the ore averaged over 7 per cent copper. Due to success of this



Head Frame at the Howie Gold Mine, Waxhaw, N. C.



Gold Recovery Test Plant at the Black Ankle Mine

mine, two other properties have been taken over, the Adams-Westfelt by the Ducktown Chemical & Iron Company and the Cullowhee Mine by the Tennessee Copper Company. Ore from these mines is shipped to Copper Hill and Ducktown, Tenn., for reduction. The Asheville Citizen recently announced that a New York company would spend \$2,500,000 on development of mines, erection of concentrating plant and smelter in the Swain County area. P. J. Burgess, mining engineer representing the company, made the announcement. It is stated that the more important mines and prospects, including the Fontana Mine in that locality, will be taken over by the company.

In Jackson County two or three large companies have engineers making investigations to determine the value of copper deposits. Important properties examined include the Cullowhee Mine, Waryhut and Betts Gap prospects. Preliminary examinations have shown veins 6 to 18 feet wide with copper content of from 3 to 7 per cent. Further development is probable.

Lead-Zinc

A promising lead-zinc deposit was discovered in the northeastern part of Haywood County the past year. James Atkins, Waynesville, N. C., is owner, and it is understood that a representative of the U. S. Smelting, Mining & Refining Company has made an offer to take over the property for further development. Ore occurs in a quartz vein about 12 feet wide; it is chiefly galena and sphalerite with some chalcopryrite. Analyses by a reputable chemist showed 34 per cent lead, 17 per cent zinc and 3.5 per cent copper. At a depth of 34 feet the vein is said to be six feet wide and quartz outcrops for a considerable distance along the surface. It is probable this property will be thoroughly prospected.

A lead-zinc discovery was also reported from Montgomery County. Some work has been done to determine the quality of the ore.

Tin

Two companies, the North Carolina Mining Company, owned by Indiana capitalists, and the Carolina Tin Company, financed by Tennessee capitalists, have been doing considerable prospecting near Kings Mountain and Lincolnton during recent months. The North Carolina company has opened two shafts about half a mile south of Kings Mountain, one sunk to a depth of 150 feet on the west vein and the other on the same vein, 75 feet deep, about 150 feet north of the deeper shaft.

The tin occurs in the form of cassiterite, Sn O_2 , and contains theoretically 78.6 per cent of metallic tin. Ore is found in the so-called greisen veins, for the most part in the mica schist adjoining the gneisses. In surface clays, sands

and gravels formed by decomposition of vein material and country rock, a great deal of fine and coarse cassiterite occurs. It is said several acres along the outcrop of the vein contains about one per cent of cassiterite. Vein material is said to contain from one to two per cent cassiterite. A small concentrating plant, consisting of small crusher, log washer, screens and Wilfley tables, has been built, with a capacity of about 20 tons of ore per day. Several hundred pounds of concentrates have been recovered.

Near Lincolnton, the Carolina Tin Company has sunk a shaft 105 feet deep in the greisen vein. Much tunneling has been done also on the 50, 70 and 105-foot levels. All material taken from shafts and tunnels has been run through a small concentrating plant. It is the intention of the owners to continue prospecting until the quality and quantity of ore has been determined.

Iron

Magnetitic iron ore deposits of Ashe, Avery and Mitchell counties have attracted attention of certain steel manufacturing interests due to the low phosphorus and titanium content; three large companies have had engineers and geologists in the field. Further development is probable at an early date.

Iron ore of this district was first

worked in a small way in Catalan forges as early as 1820; the quality of iron was soon made known and it attracted attention throughout the East. It is a magnetic iron ore, distributed in irregular masses through the gangue, composed of hornblende, pyroxene, epidote, quartz, feldspar, calcite, etc., in varying proportions, and is in the form of immense lenses. It is said that this ore produces as fine iron as is put on the market.

The future of the metallic minerals in North Carolina is very favorable and it is believed that development during the next year will be of great economic interest to the state.

VALUE OF MINERAL AND MINERAL PRODUCTS PRODUCED IN NORTH CAROLINA, 1928

Name	Quantity	Value
Brick	300,998,000 brick	\$3,157,635
Tile	62,319 tons	629,408
Clay (Kaolin)	19,898 tons	298,951
Cement Products (Estimated)		650,000
Coal	60,860 tons	201,000
Copper	8,207,000 pounds
Feldspar	105,560 tons	630,042
Gold & Silver	19,165.46 ounces	13,511
Granite	1,901,100 tons	4,416,518
Limestone, etc.	236,680 tons	342,786
Mica:		
Sheet	777,395 pounds	129,706
Scrap	4,419 tons	69,638
Pottery		41,450
Sand & Gravel	971,746 tons	531,092
Miscellaneous*		1,244,197
Total		\$12,355,934

*Includes Copper, Talc, Millstones, etc.

Industrial Development Conference

By DUDLEY V. HADDOCK, Little Rock, Ark.

The most forward step toward the industrial development of the South during 1930 will be the annual convention of the Southern Division of the American Mining Congress, to be held in Little Rock, March 10-12, inclusive. Attendance by business leaders from every state below the Mason-Dixon line would do more to arouse the South to a realization of its industrial opportunities than any other one thing during the year.

The convention will not concern itself with mining activities alone, it will be primarily an Industrial Development conference. Members of the congress realize that virtually every industry and every activity of life utilizes minerals in one form or another and with this in mind the national congress and its various sectional divisions for some years have devoted their efforts toward the development of industry in general.

Development of the South industrially and otherwise will be the theme. It is my opinion that the convention here will eclipse in importance to the development of the South generally any conference ever held in our section of the country. If one would understand the broad scope of the congress let me say that one of the program features will be a discussion

of "Tourists as an Industry," led by Herbert A. Brooks, manager of the Fort Harrison Hotel, Clearwater, Fla., a nationally known authority on this subject.

The industrial committee of every local and State Chamber of Commerce in the South should attend the congress in a body and the officials of the industrial department of every railroad should be present. Every Southern business leader interested in the industrial development of his state and the South who attends will return home with a better understanding of the problems to be solved and with information that will go a long way toward attaining this end.

Kentucky realizes the importance of the congress—more than 150 members of the Kentucky Progress Commission already have arranged to attend. Governor O. Max Gardner of North Carolina, Governor Dan Moody of Texas, and a half dozen other state chief executives will head large delegations from their respective states.

The congress presents an opportunity at a time in the history of the development of the South with promises of such profit as have never before been offered. An attendance of thousands of Southerners is justified.

Discovering Louisiana's Vast Mineral Wealth

By THOMAS EWING DABNEY, New Orleans.

ONCE upon a time, the only mineral deposits of Louisiana that were worked were the saline wells in the northern part of the state. First the Indians and then the white settlers extracted salt from these by evaporation, and the industry endured through the War between the States.

Then came the discovery of the rock salt deposits; the mining of sulphur; the discovery of oil and natural gas. These have yielded an immense wealth. But recent explorations indicate that we are as far, relatively speaking, from knowing the full extent of the treasure house under foot as the Indians were when they were content to dip up brine, in their earthen pots, and put it on the fire to boil.

Gilbert D. Harris and A. C. Veatch, in their book "The Geology of Louisiana," published in 1899, with all their research did not suspect the immense possibilities. Time after time, they passed over one certain deposit that has no equal anywhere in the United States, either in variety of concentration, or possibility of industrial development. Even today, the Department of Conservation in its Bulletin on the Natural Resources of Louisiana, devotes only a few generalizing pages to the mineral richness. It mentions oil, gas, sulphur, clay and limestone, and lets it go at that. It does not mention at all the other valuable minerals that are found in this state, minerals that promise a development as far ahead of the oil and gas and sulphur exploitation that we have seen, as that was ahead of the salt-boiling kettles.

These mineral deposits are found in many parts of the state; but in one particular section they are brought to an astonishing focus within an area of several hundred acres, a great upthrust from deep down within the earth, closer to the surface of the ground and therefore more easily workable than is the case anywhere else in the country. And right alongside, so to speak, is the cheap fuel of the largest natural gas field in the world to furnish the power for refining and combining and re-creating into new wealth the wealth that Nature has left.

Harris recorded of this deposit that it was a highly crystalline blue and white banded stone full of cracks and faults and other flaws, and added, "It can doubtless be used to advantage for making lime." And the latest comment by the Department of Conservation says it has "promises for such uses as cement, lime,

fertilizer, and crushed and ornamental stone."

This is by way of illustrating how little is known of the mineral resources and chemical possibilities of Louisiana. Even the owners and operators of the remarkably rich deposit above alluded to have only recently begun to find out what they really have.

The deposits in question are in Winn parish, about four and a half miles from Winnfield on the Louisiana & Arkansas Railroad.

For 20 years, the Southern Mineral Company, of which I. L. Lyons, Jr. of New Orleans is president, has been quarrying limestone here and selling it for road-metal. It has also sold some of it for making concrete.

This limestone stuck above the earth's surface, originally a broken, faulted mass of blue and white rock, rather picturesque to look at, with a tall formation that was called chimney rock. This material above the surface has been cut away and sold, and the quarry has been pushed below the natural ground level.

Until recently, the company management was under the impression that only limestone was contained in this deposit. When the excavating implements encountered different materials than the blue and white formation, they were carefully washed off so that only the limestone was left. It was the assumption that the limestone went down about as far into the ground as it would be economical to operate the quarry.

All of this supposition was based upon the log of an old well, which has since been proven to be about as inaccurate as anything could be.

During the past several years, the company has put down various exploratory wells, and it has learned that this limestone is merely the covering of a salt dome that at this point comes remarkably close to the earth's surface. It is only a matter of about 400 feet down. This calcite cap does not reach all the way down to the dome; it is only about 60 or 70 feet thick, and underneath that is a stratum of gypsum 25 to 30 feet in thickness, and underneath this, in turn, is a stratum of gypsum anhydrite, intermingled with iron pyrites and free sulphur. Then comes the deposit of rock salt, which has been penetrated to a depth of 700 feet without playing out.

Nor is this all. In the upper strata have been found large deposits of barium and strontium sulphates of exceptionally

high purity, the waste material which the company has been so calmly washing out of the limestone in past years. Likewise iron ores, rich in iron and sulphur.

The barium and strontium are found in the upper strata of the calcite cap, and extend to a depth of about 20 feet. The iron ore is found on the ground surface, in the shovel cuts, near the bottom of the calcite, and below the gypsum. Preliminary surveys indicate that the iron ore deposits are extensive.

This summary is made upon the authority of Dr. Herbert M. Shillstone, chemical engineer and analytical chemist, who has made a rather extensive survey of the property and has analyzed several hundred specimens taken from borings, from the shovel cuts, and from the surface scrapings. He says:

"This is one of the most valuable mineral deposits in Louisiana, or in the entire United States, for that matter."

The value of these minerals is so great not only because of the minerals themselves, but more especially because they are found in such close juxtaposition. Not only that, but the Monroe gas field is only a step away, and so the cheapest fuel for industrial operation is available. On top of this, there are immense lignite deposits next door, as it were. Now for lagniappe, add the fact that railroad transportation is there, with the tracks leading in one direction into the interior of the United States, and in the other to the port of New Orleans, which is the gateway of the South to the markets of the world.

If nature had been working according to an engineer's blueprints, it could not have grouped its raw material and its power better for the establishment there of an immense chemical development. For out of salt, sulphur and limestone are made the heavy chemicals used in the manufacture of fertilizers, dyestuffs, bleaching materials, etc.; and they are the sources from which so many other chemicals are derived.

Salt is the base for sulphuric, hydrochloric and nitric acids, the three principal acids in chemistry; and salt, when broken down by electricity, produces caustic soda and hydrogen.

And with the lignite, the coal tar products can be made. Their number is legion. Dyestuffs and medicines. Louisiana does not have to go to Birmingham to get the base for coal-tar derivatives. It has the raw material next door to an amazing mineral deposit, containing all the elements necessary for a monumental

development, with cheap power waiting to be used.

The limestone, all these years, has been wasted, so far as its true value is concerned, as road material. It is worth so much more chemically. Dr. Shilstone says that the calcite cap in question "contains an unusually pure lime carbonate. This purity makes it available for such chemical uses as the manufacture of paper, bleaching powders, cement making and for general industrial uses." He adds, "Even the clays mixed with it are adaptable to the manufacture of cement." So it will be possible to capitalize another product that has been so carefully washed away in the past. The limestone, by the way, is exceptionally free of magnesia and iron contamination.

Then there is the gypsum, which is found in all of the known chemical combinations with sulphur, from true gypsum to gypsum anhydrite. Gypsum is one of the most important ingredients in cement manufacture, and in many other industries. Gypsum anhydrite is now being introduced into the manufacture of cement. The anhydrite, in one of the forms that has been discovered in the deposit in question, produces a self-setting cement that has great possibilities in the wall-plaster industry, for the reason that it does not require an expensive calcination to develop the

hardening properties. Calcination is, burning to get rid of the moisture and break down the crystals, so that when water is added a solid mass will re-form. Besides cement manufacture, gypsum is used in making plaster board, wall surfaces of various kinds, ornaments, and as a filler for many manufactured materials. Plaster of Paris is burned gypsum.

This gypsum seems to be in considerable quantity and is available practically on the surface, after the valuable calcite cap has been removed.

Two of the forms of iron blend have been found, one on the surface in the form of an oxide, and one a pyrite. They are of exceptional purity, Dr. Shilstone's tests prove. The pyrites have been found at a depth of 90 feet, and the stratum seems to be 50 to 75 feet in thickness. The pyrites analyze 42 per cent iron and 47.8 per cent sulphur. Even if free sulphur is not found in sufficient volume to be economically worked, the pyrites contain sufficient of this material, according to many borings and tests, to feed the chemical development whose possibilities have been indicated.

The oxide of iron analyzes as high as 56 per cent metallic iron. In both the oxides and the pyrites, the percentage of iron is exceptionally high.

Barium and strontium are found in

unusually rich pockets. It can not be stated at this time how extensive these deposits are, but if they are as large as the preliminary surveys indicate, their exploitation and development will bring many more millions of dollars into the state. Barium is used in the manufacture of paint; it is a substitute for lead. Strontium is used in the beet sugar industry, in the crystallizing process. It is also used in the manufacture of fireworks. Strontium produces the red fire with which all are familiar.

The salt, the limestone, the gypsum and the sulphur, then, appear to be present in this deposit in commercial quantities. As to the iron possibilities, and the strontium and barium, the survey has not yet been sufficiently exhaustive to indicate the probable quantities in which these materials are available. There is a possibility, too, that free sulphur will be found in workable quantities; it has run as high as 8 per cent in the various specimens examined. But whether it is or not, there seems to be an ample supply of sulphur; even if there is not, this material could be economically brought in for combination with the other materials.

Salt is, of course, the most important mineral of them all, when associated with the other chemicals found alongside it. The fact that it is found at a depth of 400 to 500 feet makes it unusually economical to work this deposit.

Rich in Oil, Gas, Minerals, and Soil, Oklahoma Has Made Gigantic Strides

Gov. W. J. Holloway of Oklahoma, in a radio speech some days ago, presented a wonderful picture of the rapid industrial strides of his state.

Among other things, he said:

"More than one and one-half billion dollars in wealth is produced annually from agriculture, minerals and manufacturing plants, creating from local resources \$601 of new wealth per capita annually.

"Thirty million of the state's 45,000,000 acres are utilized for agricultural purposes.

"During 1928, value of state production was set at \$1,502,726,000, of which \$541,236,000 was from farms, \$496,500,000 from minerals and the remainder, \$476,000,000 from manufactured products.

"The value of the state's annual mineral production is \$500,000,000. Heat units in increasing supplies of coal, gas and oil could fuel the nation for two centuries.

"With a reservoir of enormous supplies

of petroleum and gas, the state since 1900 has seen a succession of new discoveries. Petroleum output climbed from 7,500 barrels in 1900 to 50,000,000 in 1910; 100,000,000 in 1916 and 276,000,000 barrels in 1927.

"In the latter year the state ranked first in quantity production, although since 1922, it ranked first in value of oil produced. In 1928, this state's production was under that of Texas. Up to the beginning of 1929, it had produced more than two and one-half billion barrels of oil.

"Approximately 125,000 wells have been drilled and 65,000 now are operated. Oil companies have expended \$2,800,000,000 in the search.

"In 1927, Oklahoma produced 326,864 million cubic feet of gas and consumed 286,485, ranking first in both items in the United States.

"It led all others in zinc production, the value for lead and zinc produced in the last 10 years being \$25,000,000 annually. It has yielded one-third of the

zinc of the nation, and ranks fourth in lead production.

"Coal in the state has been estimated at 79,000,000,000 tons. Approximately 100,000,000 tons have been mined. The coal area extends over 12,000 square miles. Many other minerals are to be found within Oklahoma's borders.

"Factories of all kinds rapidly are being established.

"Ample distributing facilities are to be found with 10 railway systems converging at seaports. Rates are favorable and service prompt. In addition, the state is paving 300 miles of road a year at a cost of \$13,000,000, financed without recourse to ad valorem, corporation or industrial tax. About 3000 miles of highway already have been paved or graveled.

"Air progress has been rapid in Oklahoma. The state lists 175 licensed aircraft, 199 pilots, 103 mechanics and 97 identified craft, resulting in the state ranking seventh in the nation and seventeenth in number of licensed pilots. There is a total of 1,345 miles of scheduled airlines with 3,720 miles flown daily. Sixty-one airports have been established. Total aviation investment is placed at \$8,000,000.

"The state's annual school bill is \$30,000,000 with 18,000 teachers instructing. Oklahoma boasts 27 colleges with a total enrollment of 55,000 students. Between \$7,000,000 and \$10,000,000 annually is spent on the college program, bringing educational expenditures to a total of \$40,000,000."

Extensive Water Power Development in Ozarks

Expenditure of Many Millions of Dollars Contemplated

Mountain Home, Ark.—When and if plans for water power developments projected in the Ozarks territory have been carried out, practically every town in the area will be served with electricity and a decided impetus given to the development of many resources in the section, including zinc, lead, manganese, ceramic clays, phosphate rock, glass sand, marble and limestone. Lines of the Arkansas Power and Light Company, Pine Bluff, will cover the upper White River country in the Arkansas Ozarks, a survey having been completed for a 66,000-volt line from Harrison to Yellville, to connect at Yellville with a line running into Mountain Home by way of Flippin, Gassville and Cotter. This line will also serve Zinc, Lead Hill and Pyatt, and another line from Harrison to Marshall will serve Everton, St. Joe, Western Grove and Valley Spring. A survey is being made for a 120,000-volt line between Batesville and Cotter.

Preliminary work is being done on water power projects on the White River and its tributaries by the White River Power Company, a subsidiary of the Electric Bond & Share Company, New York. Engineering work has been completed for a dam at Wildcat Shoals and tests are being made in the river bed, while engineering work is being done at Hog Thief Bend on the White River, above Lead Hill, where another site for a dam is being laid out. Two surveys have been made from the Wildcat dam site to Flippin, a distance of 4 miles, for a railroad over which materials will be hauled for the development, the road to connect with the Missouri Pacific at Flippin. The White River Power Company has 10 sites on White River and its tributaries, Crooked Creek, Northfork River and Buffalo River, but is at present active at only two sites.

It is understood that if the proposed Table Rock dam in Taney County, Missouri, is constructed, an enterprise controlled by H. L. Doherty & Co., New York, two low head dams will be built above Cotter on the White River, one at Wildcat and the other at Hog Thief bend. If the Table Rock dam is not constructed, one head dam will be built at Wildcat. The proposed Table Rock dam would be 180 feet high and would cost about \$19,000,000. It would form a lake 75 miles long and provide for a power plant capacity of 76,500 kilowatts. The dam at Hog Thief bend would be an earth and concrete structure, 90 feet high, for a development of 40,000 kilowatts and cost about \$9,000,000. If a

low head dam is built at Wildcat Shoals it will be of earth and concrete, 125 feet high, to develop 225,000 kilowatts, and cost about \$18,000,000, but if a high head dam is built, it will be a multiple concrete structure, 225 feet high, to develop 250,000 kilowatts and cost about \$80,000,000.

The completion of the projects would create three clear water lakes in the mountains above the Upper White River and is calculated to make the White River country one of the leading resort centers in the United States. They would also serve as carriers for a large inland territory over which timber and mineral products would be moved to railroad points and during seasons of wet weather would hold back the head rises of the river and reduce the crest of the flood waters on the lower reaches of the river.

\$45,000,000 Building Projects Annually for Private Enterprises in District of Columbia

Washington, D. C.—The average yearly expenditure for the construction of private buildings in the District of Columbia for the next three years will reach \$45,000,000, according to an estimate by Col. John W. Oehmann, District building inspector. This estimate was contained in a report to Maj. D. A. Davison, assistant engineer commissioner, and does not include municipal or federal construction. The federal building program will necessitate much rebuilding, in addition to new construction, in the opinion of Col. Oehmann, for the readjustment of the business district and the adjacent residential area. Private building operations authorized in January represent a cost of \$4,000,000 and it is estimated that the monthly average for the current year will exceed these figures. The cost of private construction last year, as indicated by building permits, was placed at \$36,129,765.

Big Store and Office Building for Atlanta



Rapid progress is being made in constructing a store and office building at Pryor, Edgewood and Decatur streets, Atlanta, Ga., for the North Pryor Street Corporation. Nearby are many of Atlanta's important office buildings, several modern garages and other parking facilities. The first unit will be of five stories, but foundations, columns and arrangements in mechanical equipment are planned for the addition of five more stories, ultimately resulting in the 10-story building pictured here. About 17,800 square feet of space are available on each floor. On the first floor the structure will be subdivided for 12 store units, each of which has a basement space. The building will be of reinforced concrete with metal windows and doors. Exterior will be of limestone. Show windows are to be trimmed in bronze. The base of the building and the main entrance lobby will be finished with Verde Antique marble. A. Ten Eyck Brown is the architect, and A. Barili, Jr., associate architect. General contractor is the Griffin Construction Co.

Would Grant Independence to Philippines

By COL. CLARENCE OUSLEY, Dallas, Texas.

We took the Philippines as an act of war against Spain. But while military tactics warranted us in doing this, neither military nor other necessity required us to retain them beyond the period of insuring them from conquest by greedy nations less conscientious and scrupulous than we profess to be. The Filipinos, by and large, are as intelligent and as capable of self-government as the Cubans, the Haitians or the Dominicans and we do not hold dominion over these others. In the ethics of international dealings we owe no more to the Filipinos than we owe to the others. The same processes which we employ for the others we can employ for the Philippines. We can exercise suzerainty over their foreign affairs and the right to compose internal strife whenever occasion requires.

The menace of seizure by Spain, or Japan or Germany, which may have been real 30 years ago, no longer exists. The lessons and the consequences of the World War have utterly removed it. Spain is no stronger now than she was then; Germany is humbled; Japan has a new respect for our military prowess and less conceit in her own; besides, there's the Five-Power Pact of Washington, the Kellogg Treaty, and there's soon to be another armament agreement. No candid American statesman will now affirm that any alien power would dare to assail Philippine independence over our protest.

But these changes in world affairs and world attitudes have not touched our American doctrine that "Governments derive their just powers from the consent of the governed," which is violated every hour that we govern the Filipino people without their consent. Nor do they touch the rule of all history that any government which a people set up for themselves, or which they approve, is better for them in the long-run than any government that may be set up for them without their approval, for it is historically, psychologically, sentimentally and practically true in the strictest sense that only by the exercise of the art of self-government can stable self-government be attained. It is extremely doubtful whether the self-governing American republic would have emerged from its swaddling clothes if the American people had not learned self-government through the experiences of the self-governing American colonies. By any other rule Mexico, China and a score of other nations would now be under alien dominion.

Principles of American government,

considerations of human justice and the lessons of history are all on the side of Philippine independence and are all offended, repudiated and scorned by the continuation of American dominion.

What of the proper considerations and actual facts of the self interest of the American people? This is treated last in this presentment, because it is least in the category of motives which should govern a people as powerful and rich as we are and as righteous as we profess to be, and yet it is a very real concern and a perfectly proper motive.

South Unprotected From Philippine Competition

The bald economic fact is that our tariff policy, which admits Philippine coconut oil free of duty, disastrously depresses the value of American cottonseed oil, which is an important part of the American cotton crop, and in less but considerable degree, depresses the value of American butter and lard. Cotton producers, dairy producers and hog producers (who are mostly corn producers) constitute the great majority of the American farming operators, whose industry on the whole is at present the most serious problem of the nation. We have made a gesture of farm relief by national legislation, but in spite of appeal, we continue a tariff policy which subordinates the well-being of American farmers, our citizens, our bone and sinew, to the supposed well-being of the Filipino waifs of war whom we made our wards over their protest. The phrase "supposed well-being" is used advisedly, for the report of the United States Department of Agriculture, Trade Promotion series No. 11, states the fact that "One of the most popular areas in Mindanao is the Province of Davao, where, it is reported, 30 American, 29 Filipino and about 50 Japanese companies are engaged in coconut production."

Thus we are subjecting American cotton growers, dairy producers and corn and hog producers to disastrous competition for the principal benefit of a few American, Filipino and Japanese capitalists—mostly Japanese.

Coconut Oil Duty Free

The peculiar vice of the policy is that vegetable oil imports from foreign countries are taxed, while coconut oil from the Philippines is admitted free of duty, and this discrimination gives the Philippines a virtual monopoly of vegetable oil imports. The few American and Filipino capitalists and the more Japanese capitalists engaged in the industry are making the most of their oppor-

tunity. According to trustworthy estimates, they are earning from 25 to 45 per cent annually upon their investment and at the present rate of increase their imports will equal the total production of American cottonseed oil by 1934.

The vast body of Filipino people do not wish our dominion. They prefer to be free. The vast body of American farmers do not wish it. The vast body of American people not engaged in farming care nothing about it. Who among us desires or profits by it? Only a few American soap manufacturers and possibly a few zealous fanatics whose concepts of benevolence despise all economic truth and all concerns of real patriotism.

Every consideration of American governmental principle and of American well-being demands the release of the Philippines to their own rule and their own resources.

To Broaden Retail Credit Data Survey

Current check on the trend in consumer buying and retail credit will be possible after July, 1930. William L. Cooper, Director of the Bureau of Foreign and Domestic Commerce, announces that the bureau has found it possible to comply with the request of the National Retail Association to collect nation-wide reports on retail sales and credit trends semi-annually. The results of the National Retail Credit Survey are now being prepared for publication.

Analysis has been made of the net sales of approximately 20,000 establishments with total sales in the neighborhood of \$5,000,000,000. The kinds and extent of retail credit, credit losses, use of credit bureaus, use of finance companies, extent of returned merchandise, extent of installment credit and collection percentages have been ascertained.

The semi-annual data will be gathered from seven types of retail stores consisting of furniture, department, jewelry, men's clothing, shoe, women's specialty, and electrical appliance stores, through the cooperation of the local credit bureaus and the District Offices of the Department of Commerce. Merchants in the following 23 cities will be asked to cooperate in furnishing the information: Atlanta; Baltimore; Boston; Chicago; Cleveland; Dallas; Denver; Detroit; Indianapolis; Kansas City; Los Angeles; Louisville; Minneapolis; New Orleans; New York; Philadelphia; Pittsburgh; Portland, Ore.; Richmond, Va.; St. Louis; San Francisco; Seattle; and Washington, D. C.

New Cement Plant in Texas Near San Antonio

The new plant of the Republic Portland Cement Company at Longhorn, Texas, some 12 miles northeast of San Antonio, from which the first cement was shipped in August, 1929, has a daily capacity of 3600 barrels. Several outstanding features are: No overburden in the quarry; crusher plant and quarry on same level; a single hammer mill does all the crushing; minimum of rehandling; natural gas used as fuel; gypsum obtained from Falfurrias, 200 miles away; water supplied by two deep wells; electric power purchased from San Antonio Public Service Co.; transportation via M. K. & T. R. R., I. G. N. R. R. and the San Antonio-Austin Highway. The village is designed to house 120 families and has divisions for white, Mexican and negro laborers.

The Terrell Bartlett Engineers, Inc., San Antonio, were the engineers, with Richard K. Mead & Co., Baltimore, as consulting engineers. Construction work was handled by Smith Brothers, Inc.

The Bland Engineering Co., Minneapolis, built the slurry tanks, silos and pack house. The Heine Chimney Co., Chicago, erected two 200-foot chimneys. The General Electric Co., Schenectady, N. Y., furnished all electrical equipment including 77 motors totaling 6580 horsepower, together with necessary switchboard transformers, switchgear, cables and control apparatus. Kilns, coolers and mills were furnished by the Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

A completely equipped machine shop is provided, together with a storehouse and electrical shop. In the quarry, Plymouth gasoline locomotives, Easton dump cars and a Marion electric shovel are used. In the crusher house is an overhead Shepard hoist, a Dixie Machinery Co. Mogul crusher and a Stevens-Adamson pan feeder. In the pump house are two turbine type pumps supplied by the Pacific Pump Works and a Goulds centrifugal pump. A belt conveyor for handling material to storage piles or to bins feeding the raw mills was furnished by

the Hewitt Gutta Percha Rubber Corp., Buffalo, N. Y., and mechanical parts including tripper were supplied by the Link-Belt Co. A 7½-ton Pawling & Harnischfeger crane with a 3½-yard bucket operates above the clinker pit and bins; Leeds-Northrup instruments are used for recording temperatures and drafts on the kilns; slurry is pumped to the slurry tanks by two Wilfley pumps; an Ingersoll-Rand air compressor supplies air to the revolving agitators, and slurry is fed to the kiln by Ferris wheels. Two Fuller-Kinyon pumps handle cement from the finish mills; Northern Blower Co. dust collectors collect dust from the finish grinding system; two Bates four-spout sackers are used to fill the bags in which the cement is shipped; an Otis elevator serves various floors of the pack house.

Officers of the company include: J. H. Smith, president; W. M. Thornton, vice-president and manager; B. R. Collins, secretary. L. O. Cox is sales manager and A. F. Sayers, superintendent.



Republic Portland Cement Plant With Daily Capacity of 3600 Barrels

\$450,000,000 UTILITIES CONSOLIDATION

Stone and Webster Plan to Acquire Engineers Public Service Company

Directors of Stone & Webster, Inc., New York, have announced plans for the acquisition of the Engineers Public Service Company, New York, a holding corporation controlling properties valued at \$350,000,000. This deal is said to mark the beginning of a new plan of organization of Stone & Webster, Inc., whose assets are listed at about \$100,000,000. Heretofore it has held minority interests in a number of utility operating companies throughout the country, managing them and furnishing engineering and construction facilities, while the control was left in other hands. In the future,

according to reports, the company plans to control affiliated and connected organizations in which it now has a minority interest and in some cases outright control will be sought.

With an authorized capital stock of 1,500,000 shares, of which 1,258,981 shares are outstanding, the company plans to increase its capital stock to 3,000,000 shares to take care of the exchange plan. The common stock capitalization of the Engineers Public Service Company consists of 1,814,071 shares of no par value and its subsidiaries include the Virginia Electric & Power Co., the Key West Electric Company, the Eastern Texas Electric Company, the El Paso Electric Company, the Gulf States Utilities Company, the Western Public Service Company, the Savannah Electric and Power Company, the Baton Rouge

Electric Company, the Ponce Electric Company and the Puget Sound Power and Light Company. Subsidiaries of Stone & Webster, Inc., include the Stone & Webster Engineering Corporation, Stone & Webster and Blodgett, Inc., the Stone & Webster Service Corporation, the Stone & Webster Associates Corporation, the Stone & Webster Investing Corporation and the Stone & Webster Realty Corporation.

Montgomery Banks Consolidate

Montgomery, Ala.—The business of the Fourth National Bank here has been taken over by the First National Bank, the deal being consummated at a conference of officials of the two institutions and of the Federal Reserve Bank of Atlanta.

Florida's Industrial Possibilities

By WILLIAM L. WILSON, Chairman of the Industrial Board of the Florida State Chamber of Commerce, Panama City, Florida.

[Extracts of a recent speech delivered at the "Everglades' Day" luncheon in Miami by William L. Wilson outlining some of the industrial possibilities of Florida. After pointing out the advantages of Florida for the gathering of raw materials and distribution of the finished product, with respect to the state's geographical location in the path of commerce between the northern section of this country and Latin America, Mr. Wilson listed a few of the raw materials which are available for manufacturing purposes within the state.—Editor MANUFACTURERS RECORD.]

NO state in the Union is better equipped by nature for the purpose of producing cheap wood or cellulose than Florida. It is the only state in which the slash pine tree occurs naturally from border to border. It is a rapid grower when given half a chance and it will produce three separate crops within a reasonably short time: Wood pulp or cellulose; naval stores, which we are beginning to call "pine tree chemicals"; and lumber. This means paper, rayon, cellophane, duco, and a gradually increasing list of other cellulose products. It means paints, varnishes, artificial camphor, shoe polish, soap, and surely other things which the research chemists now at work will find can be produced from naval stores.

Incidentally, rosin enters very largely into the manufacture of paper. It means lumber, certainly small dimension stuff indefinitely, and it has been demonstrated that a very excellent synthetic lumber can be made from the waste left in the manufacture of all of these forest products. A very pretty combination of manufacturing possibilities occurs with rosin in connection with the oil from tung nut trees which are now being planted in many parts of the state. The use of tung oil in varnishes makes possible the use of more rosin.

From the farms of this section and nearby we can obtain vegetable oils; sugar with cane fiber and high grade paper pulp as waste products; cotton for cotton goods, rayon, duco or any of the products demanding high grade cellulose, tobacco for cigars and cigarettes, and the surplus fruits and vegetables for canning. Also milk and meat, for with the elimination of the cattle tick Florida is capable of raising cheap cattle so that milk and meat are important local raw materials.

We already produce what is practically the world's supply of phosphate, and yet although we use great quantities of fertilizer a very small portion of our phosphate is being acidulated and worked into fertilizers within the borders of the state. We possess deposits of kaolin which is shipped to East Liverpool, Ohio, for the purpose of manufacturing china. We have many good clays, and yet bricks, tile, and terra cotta are shipped in. We have some of the largest and purest

limestone deposits, and limestone is one of the basic raw materials. There are inexhaustible supplies of sand which is almost pure silica. Iron and steel are manufactured near our borders and can be obtained cheaply.

Common salt of the best quality occurs on some islands south and west of the mouth of the Mississippi River and in the largest quantity to be found anywhere in the United States; it can be barged to any port in Florida. When treated with water, heat and electricity it can be made to produce caustic soda, which in turn is used with wood pulp and cotton in the manufacture of rayon. Caustic soda or soda ash, which is caustic soda and limestone, with rosin and vegetable oils makes soap. Two of the by-products in the manufacture of caustic soda are hydrogen and chlorine gas. When the vegetable oils of the South are treated with hydrogen gas, the result is vegetable lard such as crisco. Chlorine gas is used to bleach cotton goods and paper pulp. It is also used to purify water supplies. There is interesting little by-product which sells at a high price, sodium hyperchlorite. One chemical concern has been able to stabilize this product and is selling it today as an antiseptic under the name of zonite. Then again common salt plus sulphur forms sodium sulphate or salt cake which is the principal chemical used in the manufacture of paper from Southern pines. Sulphur is readily and cheaply obtainable close to Florida. Glass is made from soda ash, salt cake, limestone, and sand melted together. There are also other important domestic raw materials.

As our commerce increases, the imported raw materials originating in countries to the south and in the Orient will be cheaper in Florida than anywhere else. Some of these are rubber, mahogany and other finish woods, sisal, raw sugar, Cuban iron ore, tin, asphalt, silks, nitrates, potash, coconut, and other vegetable oils, all important as component materials involved in the manufacture of many useful articles.

The next important item in seeking locations for industries is power or fuel to generate it. I doubt if any state in the Union is better provided with available power. We have a network of high

tension transmission lines all over the state and the power companies represented in Florida are in position to furnish as great a quantity of power at as cheap a price as can be purchased almost anywhere. And right here I want to say for our power companies that as a group they are doing more to promote industrial development than all the rest of us put together. Modern science has so developed the steam engine that power can be made from coal at the mines almost as cheaply as it can from the largest water power developments, and coal in large quantities occurs very near Florida. It is possible that some other states beat us a little in the power question, but they are few and they do not have the other advantages we possess.

Transportation facilities are next. Florida has the longest seacoast of any state and this seacoast is indented at strategic points with some of the most magnificent harbors to be found anywhere. Situated in the path of important commerce, the availability of locations on the seacoast will be a determining factor in the establishment of many industries. We have many navigable streams within our borders. Do you realize that there probably is not a city in all Florida to which water transportation is not available by means of a very short rail or truck haul? Our railroads are among the best and our railroad executives are foremost in the work of building up the state. No worthwhile community in Florida is without good rail transportation and I feel certain that should new communities be built, rails will be extended to them when needed. Transportation facilities on the highways are of the best. We need not take off our hats to any state in this respect and our magnificent system of state roads is being extended rapidly.

Last under transportation facilities comes transportation by air. Miami, Pensacola, and St. Petersburg are rapidly becoming important aviation centers and Miami is already the most important air port for foreign commerce we have in the country. There is every reason for the establishment of factories to manufacture airplane parts and accessories in these cities.

Finally comes the question of labor

and in this we also lead. We possess the highest class American labor to be found and the ease and comfort of living conditions in Florida are such that more labor will come when jobs are furnished. The man that works with his hands in Florida can be happier here than elsewhere for he can live and play cheaply.

These are the great fundamental questions involved in the location of industries and which have been the governing factors in the past, but Florida has one more advantage not possessed by any other state. It has always been conservative in legislative policies and is today more friendly to capital than any other. We have none of the fancy methods which have been adopted by other states to gouge the rich man and to make him feel like moving out of the country. We treat men of wealth like human beings and do not consider them crooks just because they have been successful in accumulating some of the world's goods. We have even gone so far as to prohibit some of these methods of taxation by constitutional amendment.

Recognizing the fact that we do not possess the manufacturing psychology, that we have not yet been able to inspire it in others, and in order to dress our windows by doing something unique to attract the attention of industries the last session of the legislature passed a resolution calling for a constitutional amendment which will exempt certain industries from taxation for the definite period of 15 years. This amendment will exempt nothing that now exists. The time is limited and a definite date has been set when it is all over. This is a very important measure and will, beyond question, meet with the approval of the citizens of this state when it is voted upon next November.

Happily we have already made a start. Mr. B. G. Dahlberg is establishing in Florida what will eventually be one of the largest sugar producing communities in the world and I believe intends to manufacture his waste into Celotex and paper pulp. An increasing number of canneries are being located in Florida, using surplus grapefruit among other

things. Key West and Tampa are important cigar manufacturing centers. Tampa has in the Florida Portland Cement Company one of the most modern factories of that kind to be found; in Tampa also the American Cyanamid Company is constructing a \$5,000,000 chemical plant based on the use of phosphate. Perry, Fla., is the site of the new Graham-Paige automobile body plant. It is quite probable that at least two paper mills will be located at West Florida points in the near future. The Foremost Dairy Company, a Florida institution, is already one of the largest concerns of its kind and we hope soon it will be making all possible things from milk.

The establishment of industries will increase our taxable values immediately even though these industries themselves for a brief period may not be taxed. Industries also mean more non-producers of foodstuffs and therefore more mouths to feed. They mean prosperity for our farmers and truck gardeners, and customers for our merchants.

Towboat Embodies Features of Crawler-type Tractor in Side-Wheel Design

A test of run of 600 miles was recently completed by the Standard Unit Navigation Company, St. Louis, Mo., with its new Diesel-electric towboat, Sunco A-4, carrying 17 men, including officials of the company, crew, and representatives of the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.; the Winton Engine Works, Cleveland, Ohio, and the Nashville Bridge Co., Nashville, Tenn. The boat is 90 feet long, 18 feet beam, equipped with the side-wheel crawler type of propulsion. It is entirely of steel and was built by the Nashville Bridge Co. under supervision of engineers of the Standard Unit Navigation Co. Power plant consists of two Winton Diesel engines of 100 horsepower each, driving two generators, each with Ward

Leonard control, generators supplying current to two 80-horsepower motors, one attached to each of the side-wheels. The boat is also equipped with a moving knee on the bow and a folding tailgate on the stern, enabling it to push barges in front or pull them from the rear. It is said to be able to run backward as efficiently as it runs forward. Equipment includes separate state rooms and baths for white and colored members of the crew and contains galley, dining room, refrigeration plant, hot and cold water supply and complete lighting system. It has two powerful searchlights, one of which is said to have a range of three miles.

Side-wheels are 26 feet long, with double chains on each side and 9 paddles on each chain submerged in water, mak-

ing a total of 36 paddles in action at all times. Stream-line heavy rods from the front of the wheel to the back protect it from snags and drift. Pilot house control consists of two pedestals with levers for forward and backward movement, levers being neutral when in an upright position. With hatches open above the wheels, the pilot may observe the wheel action from any position at the pedestal. A feature of the test embraced a run from Paducah to Nashville, 212 miles, which the boat made in 53 hours towing three barges; two of these are 100 feet long and 17.6 feet wide and the other 50 feet long, of similar width. The boat drew three feet of water and the barges 2.6 feet. It is claimed that the entire test proves that boats of this type, each wheel being controlled by electric motors, may be steered perfectly without rudders.

Bids for University Buildings

Knoxville, Tenn.—Bids will be opened March 6 by the University of Tennessee, Thomas D. Morris, secretary, for erecting a library, engineering building and dormitory on the grounds of the University. Proposals will be received on the general contract and separately for plumbing, heating and ventilating, and for electrical work, and will be considered on each building separately or on all together, at the option of the University. Construction will be of reinforced concrete, brick and hollow tile, with stone trim and tile roof. Steam heat will be installed. Barber & McMurry, Knoxville, are the architects.



Diesel Powered Electric Towboat, "Sunco A4," Completes Test Run

Handling of Men Most Important in Executive Leadership

By J. NORMAN SPAWN, Educational Director, Champion Fibre Company, Canton, N. C.

"Which is the more important, to know your job or to know your men?" This question was asked recently at a business convention in the South. It is a question all industrial leaders might ask themselves and reason it out thoughtfully before making a decision. Good reasons can be listed on each side of the question; we might even say that "knowing your job is knowing your men" or that "knowing your men is knowing your job."

The industrial executive has a problem to face; namely,

He must produce a product:

1. He must produce a good quality.
2. He must produce a large quantity.
3. He must produce it economically.

In producing the product he uses:

1. Machinery.
2. Material.
3. Men.

He knows what he can expect from the machinery provided it is in proper working condition.

He knows what he can expect from the material.

He knows what he would like to expect from the men.

This last item is the most uncertain thing the industrial executive has to contend with in his daily work. There are so many variables which enter into the situation that the man power becomes a rather difficult and complex problem.

A number of executives have side stepped the issue for awhile by putting this responsibility off on the shoulders of their superintendents, who in turn have delegated it to the foremen, so that today in many industrial establishments

the foreman is, as one fellow so aptly expressed it, a "shock absorber."

The time is coming and not so very far distant when many Southern industrial executives will have to face this issue squarely. The man power problem will have to be met and solved, and it will be *good leadership* that solves it. But what is Good Leadership?

Good Leadership is the ability to make people like and respect you and to want to carry out your orders promptly and efficiently. Some executives may object to this definition and say, "Why should I try to make my workers like me?" Have you ever asked a group of workers if they had ever worked for a boss they did not like? When you asked them, why, they have answered in many ways, all summed up in this reply: "Because he did not know how to treat his labor."

Two necessary characteristics for any executive to develop in himself are sincerity and justice, if he wishes to become a good leader. Next we have respect. Some executives may say, "My job demands respect." Yes, the job quite often demands it, but many times the workers do not respect the man holding the job, either for his lack of leadership or because of his personal character. It does not take workers very long to see through insincerity and they soon lose respect. What has that to do in getting out production? Well, it takes good leadership to get out production and you cannot have leadership unless there is respect to support it.

Again the executive may say "I don't believe I should try to get my workers to want to carry out my orders prompt-

ly.' I'll make them do it, or else discharge them and hire others who will do as I say." The workers can be discharged but it costs money and takes time to train new workers to do that job; no matter how much experience the new employee may have, there is something to learn on every new job. Unnecessary labor turnover is always costly. Common sense tells us that it is better to get a person to want to do, rather than make them do it.

To perform a job efficiently means that it must be well done, and at a minimum in cost, time and material, which also signifies that the worker performing the job is skilled. Therefore good leadership means training the workers to do their jobs efficiently.

Success of any enterprise rests primarily on its man power, for to succeed the company must have the wholehearted support and cooperation of its workers. If unable to get it, it is only a matter of time when there will be serious labor trouble or other difficulties will develop.

As a rule, the American worker wants to see the company he works for make a profit, because steady employment depends on it. Again there are many more opportunities for advancement in a prosperous and growing company.

In the final analysis, the successful company is the one with the best organization and its success rests on the shoulders of the executive who has taken the time, thought and energy to develop such an organization with his good leadership abilities.

FOR PACKING FLORIDA FRUITS AND JUICES

Howey Development Embraces 60,000 Acres of Grapefruit and Oranges

Howey-in-the-Hills, Fla.—A new citrus fruit-packing plant was put in operation here a few weeks ago, with a daily capacity of 9 cars. The building, of frame and corrugated iron construction, 110 by 130 feet, houses equipment for grading, washing and polishing, made and installed by the South Eastern Machinery Co., Orlando, Fla. The Hales system of sterilization was installed by Thomas Beard, an engineer of the Vaughn-Griffin Packing Company, owners and operators

of the plant. C. Z. Osborne, Inc., Umatilla, Fla., was the general contractor. In addition to the construction of the fruit packing plant, a juice canning plant has been enlarged.

The W. J. Howey grapefruit and orange development covers 60,000 acres, of which more than 12,000 acres have been planted to approximately 500,000 citrus trees, the value of the development being estimated at \$20,000,000. About \$50,000 is expended annually for fertilizer; more than 600 people find employment in the Howey groves, the payroll approximating \$400,000, and each season there is an average sales turn-over of \$1,000,000. A related activity is the W. J. Howey nurseries, containing 300,000 pedigreed trees, for which the annual

upkeep is \$36,000. The fruit packing house is a kindred industry, employing 100 workers, with a payroll of \$50,000 for the packing season, and the W. J. Howey factory for canning grapefruit juice and orange juice is another which creates a profitable market for full crop sales, including off-size and off-color fruit. Incidental to this activity is the further work of recovering essential oils from citrus fruit peelings and the utilization of the residue for fertilizer which commands \$30 a ton. The Howey organization maintains offices in several Northern cities and carries out an extensive program of demonstration and advertising. It also engages in the development and experimentation of citrus horticulture.

Some Major Projects of the Week

Under the Construction Department elsewhere in this issue will be found a complete list of the week's activity in the South and Southwest, including hundreds of industrial, mining, power, transportation, building construction, and financial projects. It presents a panorama of development requiring materials, equipment and machinery of almost every description.

BIG STEEL COMPANY TO USE NATURAL GAS

Tennessee Coal, Iron and Railroad Company Will Consume Initially 2,000,000 Cubic Feet Daily

Birmingham, Ala., Feb. 14, (Special)—Within the next few weeks natural gas will be used by the Tennessee Coal, Iron and Railroad Company in its metallurgical processes in the Birmingham district, according to an announcement here. A contract has been executed between this company, which is one of the principal subsidiaries of the United States Steel Corporation, and the Southern Natural Gas Corporation. It is understood that the Tennessee Coal, Iron and Railroad Company will consume in the neighborhood of 2,000,000 cubic feet daily. In addition, it is announced that the Fairfield plant of the American Steel and Wire Company, also a subsidiary of the United States Steel Corporation, will utilize natural gas for its heating requirements. Gas will be piped into the Bessemer rolling mills, a series of plants at Fairfield and to the Ensley open hearth furnaces, and several pipe lines of substantial size are now being constructed by the gas corporation and the Tennessee company to points where this new fuel will be supplied. Under the terms of agreement between the two companies, the line capacity to the Tennessee Company plants will be constructed to provide a maximum of 10,589,600 cubic feet of natural gas every 24 hours, and it is understood that the Southern Natural Gas Corporation will provide additional facilities to meet requirements up to 15,596,100 cubic feet daily, upon request of the Tennessee company. Officials of the Tennessee company are experienced in the use of natural gas in steel making and for other heating services and have manifested deep interest in the possibility of obtaining natural gas for metallurgical work.

The sale of up to about 4,500,000,000 cubic feet of natural gas annually is provided for under the contract, which is said to be equivalent in heat value to the total annual gas sales in the city of Boston, Mass.

The natural gas will be piped over a new system with 900 miles of line from the Monroe and Richland fields in North-eastern Louisiana, across Mississippi and

Alabama to Atlanta, Ga. The main pipe line in this system was completed recently and is now delivering gas as far East as Atlanta and at other cities on the route.

\$3,000,000 Sewer System

St. Louis, Mo.—Plans for a storm water and sanitary sewer system in the St. Ferdinand district of St. Louis County, to cost about \$3,000,000, are being prepared by the Edwin Hancock Engineering Company, Chicago, Ill. Sewer lines will range in inside diameters from 8 inches to approximately 96 inches. The new system is designed for an area of about 12,000 acres, embracing practically all of St. Ferdinand township and the northeastern section of Central township. The main trunk of the sewer, also known as the interceptor, will follow generally the Moline Creek bed and will cost about \$1,250,000.

\$750,000 HOSIERY MILL EXPANSION

Greensboro Mills Plan to Install 75 Additional Machines

Greensboro, N. C.—Ground will be broken soon for a new unit here for the Greensboro Full-Fashioned Hosiery Mills. This company started actual production in August, 1927, with an initial installation of 12 machines. It now plans to install 75 additional Reading full-fashioned machines of fine gauge at the rate of one machine weekly and by the end of 1930 expects to have 100 machines in operation. The new plant building will be approximately 250 feet by 107 feet, 2 stories, of brick and steel construction, with a saw-tooth roof. Charles C. Hartmann, Greensboro, is the architect. The expansion will involve an outlay of approximately \$75,000 for the building and about \$675,000 for machinery. Upon the completion of the addition, the plant will be 107 by 450 feet, one and two stories and, with machinery, will represent an investment of more than \$1,000,000. Production consists of a fine grade of chiffon, full-fashioned silk hosiery, the mill employing 350 operatives and shipping 3000 dozen pairs of hose weekly. The enlarged plant will employ about 1000 operatives for a weekly output of 10,000 dozen pairs of hose.

\$1,000,000 MINE IMPROVEMENTS

To Increase Capacity of Coal Tipples to 1,500,000 Tons Annually

Bonny Blue, Va.—Facilities being installed at the new Mayflower mine here of the Blue Diamond Coal Co., Knoxville, Tenn., will increase the capacity of the two tipples to approximately 1,500,000 tons a year. The cost of improvements is estimated at \$1,000,000. A contract has been awarded to the Champion Bridge Co., Wilmington, Ohio, for a top-house with large steel bin, steel structure and steel approaches, and to the Fairmont Mining Machinery Co., Fairmont, W. Va., for two flight conveyors of steel construction throughout, with an approximate total length of 2,400 feet. The latter company has also been awarded contract for a storage bin, tipple screens, picking tables and loading booms for the preparation of several grades of bituminous coal, loading on four tracks. A third conveyor section consisting of approximately 1,400 feet of belt conveyor in a steel structure and on a steel and concrete foundation was awarded to the Stephens-Adamson Manufacturing Co., Pittsburgh, Pa. Railroad construction and the erection of dwellings in the village are being handled by local contractors, while tunnel work and the construction of a supply incline and manway incline are being done by company forces. A walkway in the conveyor and the floor of the tipple will be of fire-proof, reinforced concrete construction. Machinery is being purchased as needed.

Contract for Federal Building

Memphis, Tenn.—General contract to remodel and enlarge the custom house, court house and postoffice building here has been awarded by the Treasury Department, Jas. A. Wetmore, Acting Supervising Architect, Washington, to the National Construction Company, Atlanta, Ga., at \$779,000. Contract for the installation of three passenger elevators was awarded to the Washington branch of the Otis Elevator Company, New York, at \$34,634. Construction work will involve the remodeling of the front of the present structure and the building of a two-wing addition. The entire cost of the project will approximate \$1,500,000.

LETTERS FROM OUR READERS

Thinks Farm Colonization in South Would Be a Mistake and Recommends Transferring Reclamation Bureau to Department of Agriculture

Beaumont, Texas.

Editor Manufacturers Record:

Agricultural overproduction is materially increased by the operation and effects of the United States Reclamation Service. Tariff legislation will benefit the farmers of the United States only to a limited extent, since the crops produced on 200,000,000 acres out of 350,000,000 acres under cultivation depend for the disposal of their surplus on foreign markets.

Relief of overproduction of farm products can be most effectively accomplished by reducing the acres of cultivated crops. This can be done by eliminating all sub-marginal lands from cultivation, by reforestation and pasturing. The tendency to bring more land under cultivation must be controlled and reduced to a minimum.

The Agricultural Department of the United States is adopting and recommending efficient methods which, if thoroughly understood and put in force, would gradually bring about healthier conditions, provided these efforts are not counteracted by the policies of the Reclamation Bureau of the United States. The Agricultural Department tries to reduce the acreage of crops which suffer periodically from overproduction and with that end in view advocates the elimination from cultivation of all land on which crops cannot be produced cheap enough and in sufficient quantities and quality to net a reasonable profit in normal years. Such land should be used for other purposes, particularly reforestation, or should be abandoned as cultivated land and used for pasture. Millions of acres of cut-over timber land in the East, North and South are best adapted and should be devoted only to reforestation.

The curbing of the activities of the United States Reclamation Service seems to be a necessity, because the reclamation of arid lands by irrigation increases the overproduction of fruits and vegetables more than any other cause. It is an urgent necessity that the Reclamation Service be prevented from embarking upon an entirely new field by developing Federal colonies of small farms at Government expense in several of the Southeastern states as is now proposed in a Senate Bill No. 412 and favorably reported on June 3, 1929, by Senator Simmons. Thereby \$12,000,000 is to be appropriated out of the national treasury to purchase land from private owners in North Carolina, South Carolina, Georgia and Florida, and to develop the same at Federal Government expense into small farms of 20 to 40 acres to be sold to selected farmers on 30 years time and at 4 per cent interest.

It is a well known fact that the majority of the reclamation projects, which

have been completed before the year 1929, have proved a financial disappointment to the Government. In most instances the farmers who located on land under the terms and conditions as required by the reclamation laws, have not been able to make the installment payments; as a consequence, the revolving fund which had been provided by Congress for the Reclamation Service has not revolved. The income from irrigated farms and power projects has been insufficient to reimburse the Government for its outlay and for this reason any new project which the Reclamation Department urges and for which approval of Congress is asked, has been accompanied by corresponding demands for a new appropriation.

To prevent unwarranted and financially unsound extensions of the Reclamation Service, the best solution would be to remove the service from the Interior Department and place it under the Secretary of Agriculture. The Agricultural Department is in a far better position to pass on the feasibility, usefulness and possible financial success of any reclamation project and could save the Government millions of dollars in preventing new areas being put under irrigation and cultivation, areas which can never become profitable, and which will lead to an uncalled for increase in agricultural production.

THEODORE G. KOCH.

Johns Hopkins Liberal Club Would Promote Public Debate on Southern Textile Situation

The Johns Hopkins University.
Baltimore, Md.

Editor Manufacturers Record:

Last November the Johns Hopkins Liberal Club decided to promote a public debate on the Southern textile situation, with a prominent labor leader opposing an equally prominent representative of the manufacturing interests.

We at once secured Mr. Thomas F. McMahon, president of the United Textile Workers, to present labor's point of view. The intervening two and one-half months we have spent in a vain attempt to secure someone identified with the Southern textile industry to present the manufacturer's side of the controversy.

We do not want to turn our debate into a lecture, with only labor represented. We feel that the manufacturing interests, if they knew of the situation, would send a representative to debate Mr. McMahon, so that the public could learn their side of the case also.

For this reason we respectfully request that you publish this letter in your esteemed journal, which is widely read in Southern textile circles. We respectfully urge organizations of textile men, individual manufacturers, a person friendly to their interests, who may read this letter, to communicate with us, with a view to sending a representative to Baltimore to participate in this debate.

JOEL SEIDMAN, Chairman,
Johns Hopkins Liberal Club.

"Live At Home" Activities in North Carolina

Wilmington Chamber of Commerce.
Wilmington, North Carolina.

Editor Manufacturers Record:

As you are probably aware, Governor O. Max Gardner of North Carolina has suggested a "Live At Home" program as one of the major objectives of his administration. Splendid and increasing support is being accorded from every section of the state. A practical demonstration was given recently in Wilmington, planned by home demonstration agents and other ladies of the counties of Brunswick, Pender and New Hanover. Dinner was served by 15 "born and grown in North Carolina damsels of grace and charm." The various items were contributed by ten ladies who live in the three counties. The muscadine grape juice was produced at the State Test Farm, at Willard, and the peanuts were contained in cornucopias formed from magnolia leaves.

J. P. Herring, farm demonstration agent for New Hanover county, presided, stating that the purpose of the dinner was to illustrate that North Carolina people can live at home, from home and local farm products, in splendid and satisfactory manner.

The principal speaker was C. Ed Taylor, an attorney of Brunswick county, who used the "grown at home dinner" to illustrate that the movement was of constructive nature and of great benefit to urban and city people alike. Mr. Taylor said the State Department of Education had set aside a "Live At Home" week and that the general details of the Governor's program would be given impetus through all white and colored schools in the state during the period mentioned and thereafter.

Evidencing the fact that Wilmington, like every other city, welcomes an opportunity to secure fresh products, it was stated that the Cooperative Marketing Society, composed of ladies in the three counties, on Saturdays alone had increased their sales from \$3500 in 1923 to \$21,739 in 1929, and that the total gross amount they had received was \$84,652.

LOUIS T. MOORE,
Executive Secretary.

Commendation, Not Apology

John G. Chapman, general manager of the Samoset Cotton Mills, Talladega, Ala., in renewing the subscription of his company to the MANUFACTURERS RECORD writes:

"The article in your January 16 issue entitled 'Another College Man Goes Wrong on Southern History,' was particularly interesting to me, in view of the fact that so many of our college writers are apologizing for what they consider the backwardness of the South, whereas they should in reality be complimenting the Southern states on the remarkable recovery from the utter prostration of the Civil War in such a comparatively short time."

IRON, STEEL AND METAL MARKET

Steel Is Steady—Present Rate of Production Relatively High

Pittsburgh, February 17—[Special.]—The steel trade has now reached a pretty steady gait. There were large increases in demand during January while in the last fortnight there has been no more than a slight further increase. Apparently there is ample demand to sustain the present rate of production, with prospects of some additional, but slow, increase during the next few weeks.

Considering the legacy of unsettlement which last year left, the present rate of steel production is a high one, showing but little reaction to the unfavorable developments of last year. Last week's steel production may be estimated at a rate considerably below that in February of last year, but only slightly below that of two years ago and approximately equal to the February average in the three preceding years.

Steel producers were themselves surprised by the rapidity with which demand increased and were doubtful whether the pace could be held. They had been inclined to expect recovery to be slow, but to extend over a long period, with continuous gains. Now the picture is rather that of a quick comeback, with substantially steady conditions ahead.

The steel price structure presents a much better appearance than it did three weeks ago. Then there had been a succession of declines in one line or another, indicating a weak situation as there had not been much pressure on the market. In the last three weeks conditions have been quite different. There has been no decline in any important finished steel product with the exception of a decline of five cents a keg in nails, and some lines appear if anything a little stronger than two or three weeks ago. That is certainly the case with black and galvanized sheets, which all mills seem determined to hold at 2.65c and 3.30c respectively. The decline in nails is from a range of \$2.30 to \$2.40, according to size of buyer, to a range of \$2.25 to \$2.30.

For three successive weeks fabricated structural steel awards have run 52,000 to 53,000 tons a week, which is well above last year's average. Earlier this year awards were very light but that may have been simply seasonal. The fabricating shops probably have business on hand equal to nearly five months of production at the high rate of many months past.

The Erie Railroad has ordered 2150 freight cars, making a total of 13,500 cars bought in a fortnight by the so-

called "Van Sweringen lines," for as reported a week ago the Chesapeake & Ohio, Hocking Valley and Pere Marquette had bought 11,350 cars. All told, about 20,000 freight cars have been bought thus far in the year, this representing a good pace of buying, after November and December running somewhat light.

The automobile industry had almost no production in December but quite a fair production, relatively speaking, in January. Latest reports from Detroit are that there is to be little if any further increase this month. Some makers have cut down their original schedules for February.

The farm implement industry continues to run at a very high rate, close to capacity.

Unfilled obligations of the Steel Corporation increased 51,517 tons during January. All things considered, this was the best showing made since September, as an indication of general trade. Both October and December had shown much larger increases, but those increases were due simply to annual rail buying. The order book outside of rails undoubtedly decreased during the last quarter, while January bookings were in current business.

As to rates of production, rails and structural shapes are by far the most active. Bars, sheets and tin plates are at moderate rates and wire and tubular goods at relatively low rates.

Metals Quiet—Copper Export Sales Increase — Lead Situation Favorable

New York, February 17—[Special.]—The non-ferrous metal markets have been rather quiet. Sales of copper for export, however, have been improving and are perhaps by now larger than a year ago at this time, though domestic business continues very light. Sales of Straits tin are extremely paltry and on some days scarcely a ton changes hands. On the other hand, sales of standard tin futures on the National Metal Exchange have been the best in several months. The zinc market has quieted following the spurt in business in late January. Lead business is also rather quiet, though in a steady day by day demand.

The lead situation is probably in the most enviable situation of all the metals. Stocks of lead in the United States and Mexico are the lowest in two years. Producers are frequently eating into reserve stocks since consumption is greater than current production. Lead prices

would have risen long ago had London prices advanced. But the lead situation in Europe is not as sound as that here, with surplus stocks rather large and demand indifferent. Therefore a rise in the London price does not seem probable and prices in this country will not be marked up until the situation improves abroad.

The steel industry continues to give a good account of itself, with production increasing at the rate of 3 per cent per week this month as compared with a 5 per cent gain weekly during January. Building operations are quickening. Thus awards of fabricated structural steel for the three weeks past totaled nearly 160,000 tons, the largest total on record for such a period of time. Automobile production in January at slightly under 300,000 units, was the second largest total on record for a first month of the year. Tin plate production is normal for this season of the year. Production of galvanized sheets is improving.

What may prove to be a far-reaching development among the metal industry is the promotion on the part of stainless steel manufacturers of their new product, a combination or alloy of chromium, nickel and steel. One of the prominent automobile manufacturers has adopted this steel for headlights, radiator shell, hub caps, hardware, etc. Other uses are for kitchen and household utensils such as pots, pans, percolators and the like. Manufacturers claim that this alloy has a greater tensile strength than ordinary steel, that the surface is easy to keep in condition, that there is no surface to peel off since the alloy steel is homogeneous from core to surface.

This alloy which goes under the name of either rustless steel or stainless steel is already being used as a substitute for copper in some places, especially since copper is being maintained at a price so high by comparison with itself and other commodities. It is possible too that it will supplant in some instances the use of zinc, aluminum and materials other than metals. Chemical manufacturers who produce chromium salts are already fearful lest their market be impaired, the salts having been used in chromium plating.

Surplus stocks of slab zinc increased 10,671 tons during January to the total of 87,933 tons, the largest reserves since July, 1921. These stocks are equivalent to over two months' consumption whereas the normal amount to have on hand is three weeks' consumption. The price of zinc weakened following publication of the figures. Prime western

slab zinc dipped to 5.20c per pound, East St. Louis, from 5.25c and might have gone lower had there been enough demand with which to test the market. Moreover, the price of zinc ore sagged back to \$35 per ton as against the former quotation of \$37.

The tedious wait for something to happen in copper continues. Producers are waiting for consumers to become convinced that prices are going to hold and consumers are in turn watching to see if prices are marked down. Meanwhile prices of standard copper continually rise on the London Metal Exchange, though consumers sometimes accuse American producers of having bid prices up there to give an impression of strength to the European copper trade. Export sales of copper are at the rate of 1750 tons daily, which is the best in several months. Domestic consumers have purchased for February shipment only. Foreign users buy February and some March red metal.

Sales of standard tin on the National Metal Exchange the first week in February were over 800 tons, the best so far this year. Speculators are evidently impressed with the better statistical situation, now that earnest efforts have been made to curtail production. However, tin prices are close to bottom levels of the past several years and have not reflected better statistics.

Surplus stocks of refined copper increased 32,084 tons during January to 203,404 tons, the largest in years. Refined production at 132,374 tons represented a loss of 5829 tons. Shipments totaled 100,290 tons, a gain of 6,488 tons. United States mine output was 67,602 tons, a decline of 6504 tons. The figures are regarded unfavorably, but in view of the further sharp curtailment of production early this month the February figures are expected to be much better.

Conditions Stated to Be Better Today in Birmingham Dis- trict Than at This Time Last Year

Birmingham, Ala., February 17—[Special.]—With numerous sales of pig iron still being made, though in small lots, and shops where iron is melted reporting increasing output and statements of an optimistic nature emanating from industrial leaders, prospects are to be reported bright. Casual survey shows there is iron leaving the surplus stock, while probable make is moving right along. Larger melters reiterate that trade conditions are better now than at the same time last year with prospects good for the near future. Pipe shops are doing better and indications point

to a splendid early spring and summer trade. Other shops are buying iron but at the same time not placing much stock on yards. Melters are buying frequently and accepting delivery steadily. Price base in home territory continues firm at \$15 per ton, No. 2 foundry. Sales have been made recently for delivery outside the home territory, report being that one order for 20,000 tons was accepted, delivery during the next 90 days.

Pig iron production in February is making a showing and though there are three days less this month, there will not be a great difference in the output as compared to January. Blast furnaces in operation are doing well. Lower freight rates to the East continue and solicitation of business in that section is still being made.

Steel production increased also this month, ingot production being around 93 per cent capacity. Gulf States Steel Co. has four out of six open hearth furnaces in operation while the new blooming mill is being placed, a task of about 30 days. The work on the plate mill will not interfere with other portions of the mills at Gadsden, while the foundations are being mapped out for the work on the sheet mill which is to be completed and placed in operation by August 1. Tennessee Coal, Iron & Railroad Company has its open hearth furnaces and finishing mills in splendid shape and as demand improves there is more production. Plate, sheet and structural shapes are finding splendid demand. Fabricating shops are busy, building programs throughout the South and in the Southeast calling for considerable tonnage of structural. Ingalls Iron Works Co., Virginia Bridge & Iron Company, Southern Steel Company report shop activity.

In the report following the coming to the district this week of the chairman of the finance committee, Myron C. Taylor, the president, James A. Farrell, and three vice-presidents, Kerr, Hulst and Hughes, of the United States Steel Corporation, industrial circles here anticipate a new sheet mill, the last word in that class of operation, with the continuous rolling patent.

Purchase of the plant in Birmingham of the Reeves Bros. Co., steel plate fabricators, manufacturing tanks, tank-cars, etc., by the Chicago Bridge & Iron Company, negotiations for which have been under way for some time, permits the middle-West company to get into the South, long desired. Reeves Bros. came into the district three or more years ago and considerable business has been handled. The purchasers are a concern of some size and plans call for further development.

The coal mining industry shows no change. Production is fairly good. Coke market is firm. Sloss-Sheffield Steel & Iron Company has built a new screening

plant and is now able to furnish six sizes in coke. This company is making an effort to place domestic coke in the West, anticipating a disposition of 100,000 tons annually. The new screening plant was designed and built by the Semet-Solvay Engineering Company and is modern in every detail. Scrap is showing slight improvement with various shops and even open hearth furnace operations are using more or less old material. Quotations are unchanged. Heavy melting steel is mentioned most in this class. Stock is being brought in from other states.

Quotations for pig iron and iron and steel scrap are as follows:

PIG IRON.

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$15.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$15.50; iron of 2.75 to 3.25 per cent silicon, \$16.00; iron of 3.25 to 3.75 per cent silicon, \$16.50.

OLD MATERIAL.

Old steel axles	\$17.00 to \$18.00
Old iron axles	17.00 to 18.00
Old steel rails	13.00 to 14.00
Heavy melting steel.....	10.50 to 13.00
No. 1 cast.....	12.00 to 13.00
Stove plate	11.00 to 12.00
No. 1 railroad wrought....	10.00 to 11.00
Old car wheels	11.00 to 12.00
Old tramcar wheels	12.00 to 13.50
Machine shop turnings....	6.00 to 7.00
Cast-iron borings	6.00 to 7.00
Cast-iron borings (chem.)..	13.00 to 13.50

Commonwealth and Southern Corporation

Atlanta, Ga.—In the proposed consolidation of the Commonwealth & Southern Corporation, Allied Power & Light Corporation, Commonwealth Power Corporation, Penn-Ohio Edison Company and the Southeastern Power & Light Company, stockholders of the Commonwealth & Southern, Allied Power & Light and Penn-Ohio Edison organizations have approved a general merger plan and have also specifically approved a plan of consolidation for these three companies, which were incorporated in Delaware, thus completing the first step in the simplification of the corporate structure of the Commonwealth & Southern System. Stockholders of the Commonwealth Power Corporation and the Southeastern Power & Light Company—Maine corporations—have also ratified the plans for consolidating these two companies and then to effect a consolidation with the other three. These are necessary legal requirements to be complied with before the general merger may be effected. The Commonwealth & Southern Corporation, through its subsidiaries, operates largely in the South and Southeast, the Georgia Power Company, Atlanta, and the Alabama Power Company, Birmingham, which are controlled by the Southeastern Power & Light Company, being among its most important properties. General offices of the Commonwealth & Southern Corporation are maintained in New York.

AVIATION, AIRPORTS AND AIRWAYS

New Hangar of Wood Construction

Houston, Tex.—The Notrus Hangar Corporation, Harry E. Weaver, president, has recently developed an all-wood hangar for airplane housing and protection, which is said to be entirely new to the aviation and woodworking industries. The Notrus hangar is built of curved, factory built, sectional wood units or panels, 6 by 10 feet, bolted together. Economy, speedy construction, maximum strength, durability and general utility are assured, it is said. All parts of the hangar including panels and wooden arch ribs are produced at the factory and are ready for immediate erection by bolting the structure together. Specifications provide that the exterior be covered with an 85-pound slate coated roofing, which may be supplemented by asbestos or other fireproof roof materials. All Notrus hangars so far constructed are said to have been built of Southern pine because of its availability and qualities of strength and durability. Because of the arch-shaped construction, space at either side of the door is available for toilet, locker rooms, machine shop space and other facilities, thus eliminating the necessity of erecting additional buildings.

Fast Plane for Shell Corporation

St. Louis, Mo.—The Shell Aviation Corporation, a subsidiary of the Shell Petroleum Corporation of this city, has purchased an airplane with 240 miles maximum speed and 130 miles cruising speed. The purchase of the plane is in line with the company's program for the expansion of its aviation activities. The ship is a low-winged single place monoplane and is under construction at the factory of the Travel Air Company, Wichita, Kans. It will be used by Lieut. James H. Doolittle, recently appointed head of the aviation department of the Shell organization.

\$390,000 Expenditure on Airports

Shreveport, La.—The Airports Engineering and Construction Corporation, Fort Worth, Tex., a unit of the Southern Air Transport division of the Aviation Corporation, has been commissioned as engineers for a \$300,000 municipal airport here. Plans call for an administration building, complete lighting system, concrete aprons and walks, two hangars and a machine shop. One of the hangars will be 100 by 80 feet and the machine shop, 80 by 40 feet. Grading and the construction of runways will also be a

part of the job. The same company has been commissioned as engineers for the construction of a large metal hangar at Natchitoches, La., and for the installation of boundary lights at a cost of \$15,000, and for conditioning a field and building a hangar and administration building and installing a lighting system at Texarkana, Ark.-Tex., at a cost of \$75,000.

Airport Engineering and Building

Fort Worth, Tex.—A booklet on airport engineering and construction, with plates showing plans for building and fields, has been prepared by the Airports Engineering and Construction Corp., a unit of the Southern Air Transport division of the Aviation Corporation. It is intended for the use of prospective airport builders, illustrating typical problems and outlining essentials of the modern port.

Air Passenger Schedule Grows

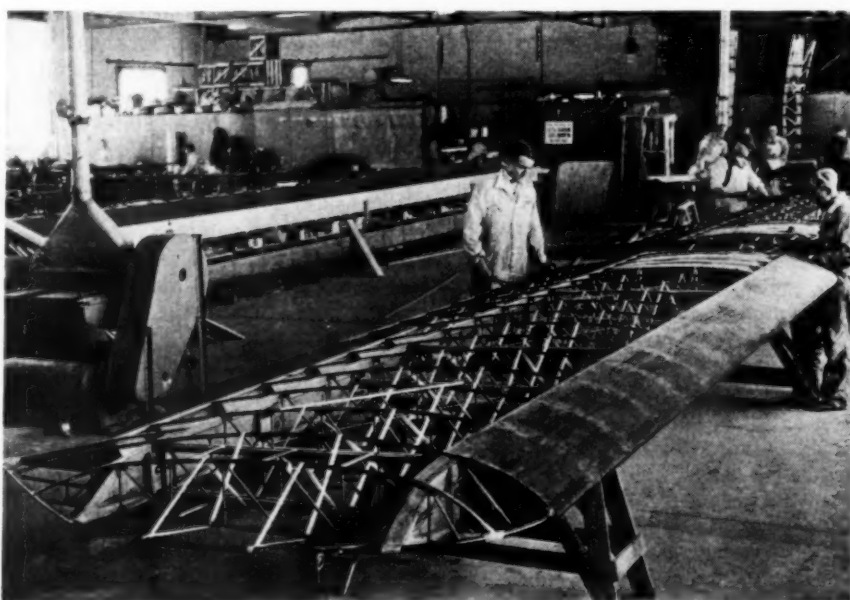
Fort Worth, Tex.—The Southern Air Transport, Inc., a division of the Aviation Corporation, announces an addition of 390 miles to its daily passenger schedule in the inauguration of daily service between Houston and San Antonio. The line will give Houston through air service to Mexico City and expedite service from New Orleans to the Mexican city, cutting the rail time of 70 hours to almost half.

Use of Gliders Increasing

St. Louis, Mo.—That the use of gliders for sport is increasing rapidly is indicated by a report to the Gliders Division of the Detroit Aircraft Corporation, Detroit, Mich., by Frank N. Blunk, special sales representative. This report states that Harry Kuchins, of this city, has leased a tract of land near Creve Coeur Lake in St. Louis, for building the first exclusive glider airport in the United States. Mr. Kuchins is now organizing the St. Louis Glider Club which will use the glider port for instruction on all types of gliders, as well as for the use of the members of the club. Lieutenant Duncan McCollum, of the 406th Reserve Squadron, is assisting in directing five glider clubs which have been organized already in Louisville, Ky.

\$1,000,000 Airport Business

Brownsville, Tex.—A report filed with the Department of Commerce, Washington, by William A. Neale, deputy collector of customs here, shows that more than \$1,000,000 worth of export and import business passed through the Brownsville Municipal Airport since March 9, 1929. A total of 727 airplanes from Mexico landed here, bringing 2694 passengers and 2880 pieces of baggage. Exports were valued at \$892,591, imports at \$100,851, and it was largely upon the strength of this record that the Department of Commerce designated the airport as a permanent airport of entry.



Wing Building Department of Ryan Aircraft Corp.

The design shown is very similar to that used on Colonel Lindbergh's "Spirit of St. Louis."

HIGHWAYS AND MOTOR TRANSPORT

United States Exhibit at Southwest Road Show

Wichita, Kans.—The exhibit of the United States Bureau of Public Roads at the Southwest Road Show and School to be held here from February 25 to February 28, inclusive, will demonstrate the value of a knowledge of subgrade soils in the proper and economic construction of highway pavements. The display will occupy a rectangular space 30 feet deep and 60 feet wide, in which 24 panels, 5 feet wide and 10 feet high, will explain by pictures, lettering and illustrations, the identification of different soils, testing operations in the field and in the laboratory for their various properties, and their classification by a rating scale according to the qualities they possess. Based on these classifications, certain surfacings and pavements are suggested.

Mexican National Highway Congress and Road Machinery Exhibit

Washington, D. C.—The Manufacturers' Division of the American Road Builders' Association has been invited by the Mexican Government, through the National Highway Commission, to attend and make an exhibit at the Third National Highway Congress to be held in Mexico City in April of this year. An educational exhibition and machinery demonstration will be held simultaneously with the Congress. Reduced freight rates may be secured on all exhibits.

United States Leads in Road Mileage

Washington, D. C.—According to a survey by Frank B. Curran and B. P. Root, of the Department of Commerce, the United States has 38.7 per cent of the world's roads. It leads the world in mileage of both improved and unimproved highways.

Arkansas To Sell \$9,000,000 Highway Notes

Little Rock, Ark.—Because of a statutory prohibition against the sale of Arkansas bonds at less than the equivalent of par at 5 per cent interest, no bids were submitted for the purchase of \$18,000,000 road bonds which were to have been sold February 12. Accordingly, the State Highway Note Board instructed State Treasurer Ralph Koonce to advertise for bids March 7 on short term notes in the amount of \$9,000,000, to

mature within 9 months after date of issue and to be taken up with the proceeds of the first subsequent sale of highway bonds.

\$8,250,000 For Roads in a Texas County

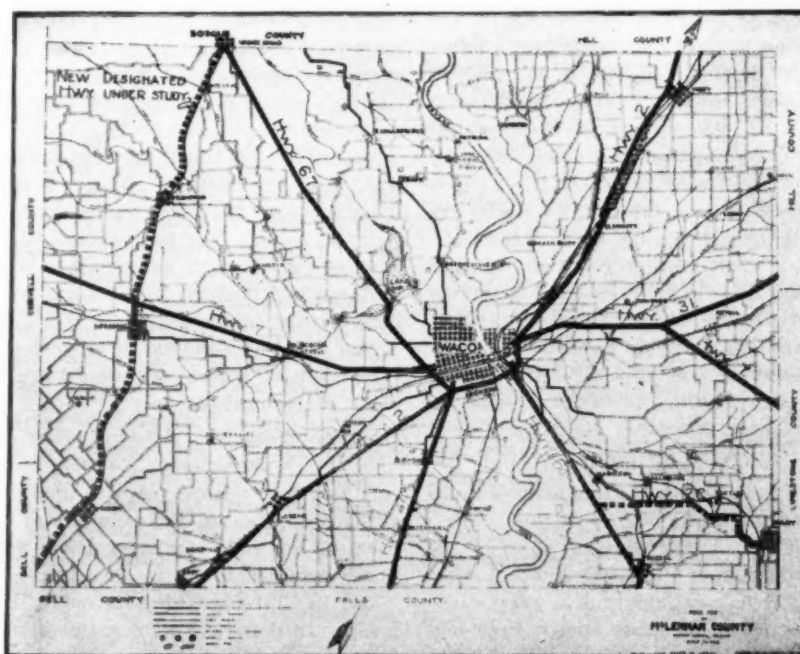
The road system of McLennan County, Texas, involving 169 miles of 20-foot concrete highways to radiate in all directions from Waco, the county seat, will represent when completed an investment of \$8,250,000. Of this amount \$5,000,000 was voted by residents of the county to take care of main highways and cross-roads connecting, all of which with existing all-weather roads will comprise 90 per cent of the county's entire road mileage. State and Federal governments are supplementing that amount with \$3,250,000, which includes expenditures for a \$500,000 bridge over the Brazos River at Waco, for a portion of the cost of constructing a \$200,000 bridge across Lake Waco to the northwest of the city, and also for drainage in South Waco to involve approximately \$200,000.

Arterial traffic will cross the Brazos River on a new steel bridge at the southeast of the city of Waco. The main loop will pass under or over the several railroad tracks in East Waco before it branches in three directions, north to Hillsboro (Highway No. 2), Dallas and Fort Worth; east to Mexia (Highway No. 7) and Corsicana (Highway No. 31); and south to Marlin (Highway 6), Bryan, Houston and Galveston. Extend-

ing west from the bridge at the Brazos, the highway will pass along La Salle and Wortham streets in a straight line near the southern extremity of the city limits to a 300-foot rotary intersection which will be built on the present Robinson road, just outside the city limits. At this rotary intersection Highways 2 (south) to Temple, Austin, San Antonio and Laredo; 7 (west) to South Bosque, Brownwood and Abilene; 67 (northwest) to Valley Mills, Clifton, Meridian, Hico, Dublin and Eastland; and 44 (south) to Rosebud and Cameron will join, spokes to the cities named from Waco.

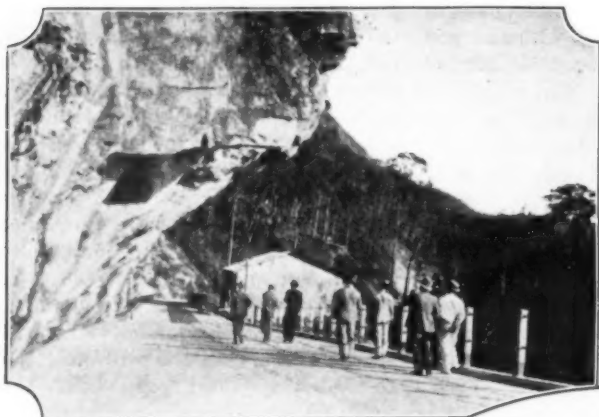
A concrete stretch from the rotary intersection to Speight Avenue in South Waco will permit the choice of driving through the city or continuing down Wortham and La Salle streets to the bridge and around the loop. The McGregor Road (highway 7 west) runs into the end of a main street of the city, Franklin Avenue, at its west extremity and traffic may come into Waco along this avenue. Highway 67, from Valley Mills and Lake Waco, also cuts across Franklin Avenue. For the traffic on the east side of the Brazos River, the end of the main East Waco thoroughfare, Elm Street, will be a gateway to Waco if desired. Highway 2 (north) and the combined Highways 7 (east) and 31 (northeast), strike the city limits on Elm Street.

E. P. Arnesson, engineer who laid out the new road system, in making the plans took into consideration the shortest practical distances between the recognized centers of population.

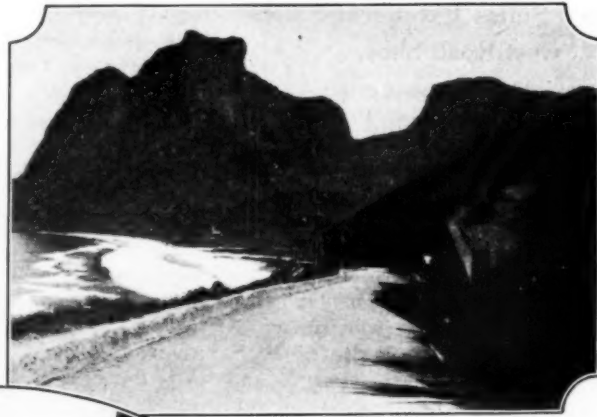


Showing Highways Radiating from Waco, in McLennan County, Texas

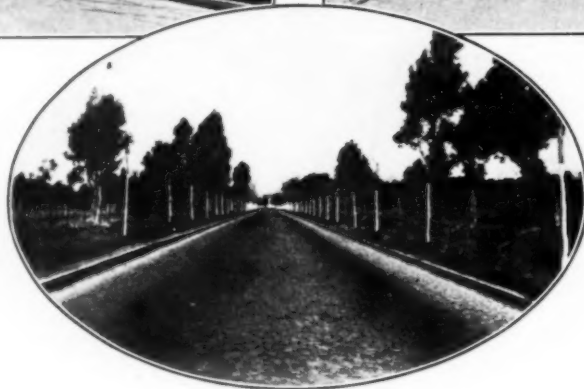
The Inter-American Highway



Above—A Hard Surfaced Road With Adequate Guard Rail in a Mountainous Section



Above—An Idea of the Scenic Beauty Abounding in South America Is Furnished by the View From This Highway



Central and South American Countries Are Building Improved Highways, Using American Methods and Machinery

Oval — Granite Block Pavement With Concrete Curbs in Argentina

THE question of continuous land transportation across the three Americas—North, Central and South—has been under consideration in one form or another for nearly 70 years. It is still unsolved. We are now nearer a solution than we have ever been before. But the undertaking is so vast and it will involve so many expenditures that its realization is still many years in the future.

It may be worth while to recall a few items of history. So far as the records have been disclosed, it was David Davis of Illinois, who introduced the first bill in Congress looking toward the construction of a Pan American railroad. His bill appeared on January 21, 1880. In the following year, 1881, James G. Blaine, then Secretary of State, suggested the holding of a Pan American conference to deal with the matter.

Hinton R. Helper wrote extensively on the subject of such land transportation. In 1881 he published a book on "The Three Americas Railway."

Blaine's Early Efforts Helpful

But it is James G. Blaine who bulks the largest in the history of this project. His efforts in 1881 were cut short by the assassination of President James A. Garfield. It was in 1889 that he reappeared as Secretary of State under President Benjamin Harrison. He brought the Pan American railroad project back with

By
HON. CYRENUS COLE
Member of House of Representatives
from Iowa

him. As a result of his efforts a Pan American conference was held and a "Continental Railway Commission" was created. A. G. Cassatt of Pennsylvania, an eminent railroad man of that period, was made president. President Harrison told the Congress that "the work contemplated is vast, but entirely practicable." On that assurance the Congress appropriated \$65,000.

Mr. Blaine lived long enough to realize that "all the Americas", if any one of them, were not yet ready for such an accomplishment. The "hard times" of the nineties were soon upon the United States, when no such Utopian undertakings were even dreamed of.

And then came the automobile, the development of which was to change all ideas of transportation.

Motor Transport Alters Country's Transportation Plans

It took many more years to apply the automobile idea to the solution of the problem of land transportation from North America to South America.

But in 1924 something important happened. In that year a delegation of road engineers from South America who had heard of what we were doing in the way

of building improved roads, came to the United States to study that work. It was a distinguished delegation.

The delegates became in effect the guests of the government, but the expenses incurred were paid by private and corporate subscriptions. Those delegates returned to their own countries to become the progenitors of good roads movements.

Highway Congresses Exert Influence

The government of Argentina was the first to crystallize that movement, by calling the First Pan American Highway Congress, which was held in Buenos Aires in 1925. The United States responded to the invitation by sending an able delegation to that congress, with H. H. Rice of Detroit, as chairman and Thomas H. MacDonald of the Bureau of Roads, as chief engineer.

The honor of calling the Second Pan American Congress of Highways was awarded to Brazil. For unavoidable reasons this congress was delayed until August of 1929. To this congress President Hoover, under authority of Congress, sent a delegation that was able to take an important part in the proceedings. Of the eight delegates, two were representatives of the automotive industries, J. Walker Drake, designated as chairman, and H. H. Rice, both of Detroit. Four were engineers, Thomas H. MacDonald, Frederick A. Reimer of the American Road Builders Association,

Frank T. Sheets of Illinois and C. M. Babcock of Minnesota, but the latter was not able to accompany the delegation. As representatives of the congress the president designated Tasker L. Oddie, a senator from Utah and Cyrenus Cole, a member of the house from Iowa. Accompanying the delegation were Pyke Johnson, secretary of the Highway Education Board, who acted as executive-secretary; William Manger, as a representative of the Pan American Union; George Georgens of the Department of Agriculture, as official photographer, and Jose Tercero, of the Pan American Union, and Wyatt Pickens of South Carolina as linguists and interpreters.

The proposed Pan American Highway was made part of the agenda of the congress at Rio de Janeiro by the action of the Sixth International Conference of American States, held at Havana, Cuba. By a formal resolution this conference recommended that the congress at Rio de Janeiro should give consideration to the building of such an inter-American highway and should adopt agreements conducive to the construction of "a longitudinal highway to traverse the continent". By the same resolution the work of preparing data was entrusted to the Pan American Union.

By this resolution the Pan American Highway was made one of the important matters discussed at Rio de Janeiro. When the question was called up, in the Fourth Section of that congress, the American delegates practically stood aside. They felt that as the costs of such a highway would fall almost wholly on the southern republics, it should be left to their own determination. In a formal statement, entered on the records, the American delegates expressed the opinion that the first concern of each country should be to perfect its own system of highways, to serve its own needs, and that after such systems had been completed, they could be and naturally would be connected up across boundaries and thus form the desired inter-American highway.

International Road Connections Urged

But the delegates from the other countries took a more aggressive position. They deemed it of the highest importance to establish such an intercommunicating highway. In this the delegates from Argentina and Brazil were the leaders and those from Chile and Peru were prominent. One route proposed was from Buenos Aires to Santiago, Chile, crossing the Andes at Mendoza, and thence northward through Chile and Peru. The Brazilian delegates suggested a route northward from Rio de Janeiro through Bolivia, and up the west coast.

Conclusion of the matter in the Rio de Janeiro congress, has been summed

up by William Manger in his report as the representative of the Pan American Union, as follows:

"With reference to the construction of an international or Pan American highway, the governments represented at the congress were urged that, when planning or increasing their systems of improved highways, they adopt the routes that are most convenient for the international connections; and that when carrying out construction they should always give preference, as much as possible, to said connecting highways. For the purpose of definitely fixing the Pan American highway system, the governments were requested to send the plans of these highways which should be considered international, to the Pan American Union, which is requested to facilitate and make effective this important project."

The building of such a highway, so we all thought at Rio de Janeiro, is simply a question of time. Building highways is not as easy in South America, or in Central America or Mexico as it is in the United States. Whichever way one turns to construct such a road or roads, mountains stare him in the face. But the engineers assure us that the obstacles are not insurmountable.

But we have also to deal with the fact that many of the regions to be traversed are sparsely inhabited and poor in financial resources. But neither are these obstacles insurmountable. Those who came into contact with the delegates assembled at Rio de Janeiro know how determined our southern neighbors are to go ahead with their road programs. One official expressed the opinion that they must build roads or their civilizations will languish.

Aid from This Country Forthcoming

Of course it is not contemplated that the government of the United States as such shall finance the construction of such a road, in so far as it lies outside of the United States. Any financing that may be done in this country will be through private and corporate agencies and by loans.

But Congress has authorized appropriations up to the modest sum of \$50,000, to render engineering and other technical assistance, when called upon by countries interested. The President would be authorized to send engineers either of the Army or the Bureau of Public Roads to give such advice and render such assistance as would be asked.

Progress on Route in Various Countries

Reports submitted at a special conference at Panama, in which the American delegates participated, October 7 to 12, showed that in Mexico the work is well under way. Starting at Laredo, Texas, much work has been done on the road to Mexico City. It is practically a passable road already. But it will be greatly improved. From Mexico City to the Guatemalan frontier the road has

been laid out and much work has been completed. Through Guatemala construction is under way and in parts well advanced. This republic may be the first to complete its part of the highway. Salvador is at work on an ambitious road program, the main road will extend across the republic, fitting into the great international highway. Through Panama an improved road has been constructed to within a few miles of the Costa Rican boundary. Costa Rica and Nicaragua at the present time present the greatest of the problems to be solved. A long stretch of the proposed road through Costa Rica is through a region with little or no population. But in the conference at Panama the hope was expressed that within four or five years the road to the Panama Canal would be fit for travel.

From Panama southward the project encounters the mountains of Colombia, and this is considered the hardest unit of the whole undertaking. But again we have the assurances of engineers who have been over the route that there is nothing in even Columbia that is insurmountable. In Ecuador the problems are very similar to those in Colombia.

But when we reach the northern boundary of Peru the prospects brighten. In that country under the vigorous administration of President Legula over 12,000 miles of roadways have been improved. Two longitudinal highways, from Ecuador to Chile have not only been projected but under construction. One of these will traverse the valley between the Andes and the coastal ranges and the other will be along the coast. Much, if not most of the work on the coastal road has been or soon will be completed, making travel possible the length of the republic.

In Chile the road program is quite as comprehensive. A highway system comprising over 6,000 miles has been mapped and it is being improved at the rate of about 400 miles a year, with the hope of speeding it up. The main work is being done on the longitudinal road from north to south.

Connecting Chili and Argentina

That brings us down to Santiago in Chile. There is more than a trail across the Andes to the pampas of Argentina—part of the trail has already been converted into a good automobile road. The rest can be and will be. Building a road across the pampas to Argentina will be like building a road across Illinois and Iowa. It will be across a level country, with hardly an obstacle. But the materials will have to be transported from some distance. But there is plenty of materials in the Andes and the transportation of them will all be down grade.

The Pan American Highway is inevitable—eventually.

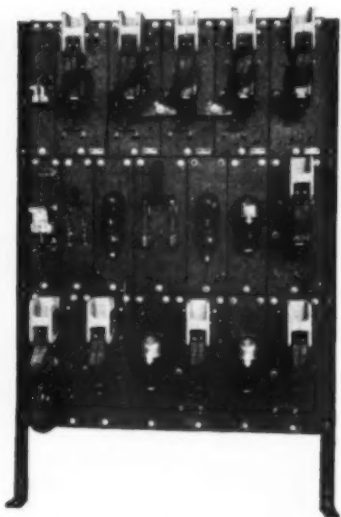
NEW AND IMPROVED EQUIPMENT

Heavy-Duty Cutting Equipment

The De Walt Products Corporation, Leola, Pa., announces the development of extra heavy-duty cutting equipment consisting of a new portable sawing unit available for cross-cutting and dadoing 12 by 12 to 20 by 20 timber. The unit is handled by one man feeding the saw with a hand-ratchet gear feed or by chain feed on the arm of the machine. The arm may be raised or lowered to depth of cut, and saw blades up to 36 inches are provided to handle 12 by 20-inch material or a 16-inch dado head may be used to dado up to 3 inches. Saw blade operates at 1750 R.P.M. and is direct driven by a motor operating on a 2 or 3 phase current in 220 to 550 volts. Models L and T are supplied, the latter, which is of larger capacity, being mounted on a metal table equipped with all steel conveyor rollers. The elevating device is operated by a wheel in front of the table. Both machines have been built for hard service.

Controller for Crane Hoists

The Electric Controller & Manufacturing Co., Cleveland, Ohio, announces a dynamic braking controller for crane hoists, the "Wright Dynamic Lowering Circuit Controller." It is of the magnetic contactor type and is intended for use on crane, ore and coal bridge and



Dynamic Braking Controller

bucket hoists. With this lowering circuit, the brake releases instantly, it is said, and instead of passing only one-third of the line current through the brake on the first point lowering, this new circuit passes all of the line current through the brake. The operator need not hesitate on the first step, but may

move his master controller to any desired speed point, and improper brake adjustment is said to have little effect on this quick release. Outstanding advantages claimed for the Wright Dynamic Lowering Circuit are: Faster speed when lowering light loads or empty hook; greatly reduced power consumption on all loads at all speeds; greater power return to the line when lowering overhauling loads; reduced peaks of current; lower heating on the motor; less contactor wear and fewer movements when inching for accurate stopping of load. The controller uses the EC&M new design shunt contactors and the EC&M time-current acceleration relays and is usually supplied with the new EC&M type NT master switch and nickel alloy grid resistors.

Crawler Type Crane and Excavator

A $\frac{3}{8}$ -cubic yard crawler type crane and excavator, said to incorporate outstanding features of design and construction, was recently put on the market by the Ohio Locomotive Crane Company, Bucyrus, Ohio. This machine is claimed to embody a high degree of precision and workmanship, allowing a wide margin of strength for safety. All castings are of cast steel and the machinery base, side housings, roller path and rack and the large frame in the car-body are each made of a large steel casting designed to withstand severe shocks and strain without breaking. Shaftings are of high grade steel, larger in diameter, it is said, than is actually needed; are accurately machined and provided with large sized keyways to prevent shearing or rolling of keys. All shafts revolve at low speeds, the highest being 68 R.P.M., and do not require frequent lubrication. Bearings are made of bronze and gears are of steel, while

the clutches are of the internal expanding type 18½ inches in diameter, the shoes being faced with composition lining which may be renewed easily without disturbing other parts on the shaft. Clutches are all of one size and interchangeable. An International gas power plant is employed, built especially for industrial purposes, and the crane or shovel will make 7 revolutions per minute. For shovel operation the boom is of the box girder design with outside dipper handles. A boom hoist operated by power is provided and operating levers and hydraulic brakes are controlled from the operator's seat. A cab of heavy sheet steel is used and a method employed to draw fumes and gases from the motor away from it. Tracks are of cast steel and adjustable and the tread side frames are made in a one-piece steel casting. The machine may be converted from a shovel to a crane and vice versa. When furnished as a crane it will be equipped with a 30-foot steel beam to handle a clam shell bucket, but a longer boom may be used if desired. As a shovel, it is equipped with a 16-foot boom to handle a steel dipper provided with bucket teeth. The unit is claimed to have a 25 per cent factor of safety for stability.



This Ohio Product May Be Converted from Crane to Shovel and Vice Versa

CONSTRUCTION DEPARTMENT and NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ala., Birmingham — City voted \$1,000,000 bonds for acquiring approx. 300 acres between Woodlawn and Tarrant City, and for constructing suitable buildings, hangars and drainage system for A-1-A airport; light for night flying. 2-13

Ala., Decatur—City and National Airways System, Inc., Peoria, Ill., announced plans for developing municipal airport; start grading and erecting hangar in few days; local citizens to invest \$20,000; plan dedication Mar. 11.

Ark., Little Rock—City, Pat L. Robinson, Mayor, advises Love-Sultan, Inc., St. Louis, Mo., has charge of designing and constructing municipal airport, Fourche Dam site. 2-6

La., Shreveport—H. E. Barnes, City Engr., authorized to proceed with plans for draining municipal airport. 2-13

Mo., St. Louis—American Airways, Inc., New York, \$200,000,000 operating company, reported, being formed by merger of Universal Aviation Corp., St. Louis; Interstate Airlines, Inc., Evansville, Ind.; Southern Air Transport, Inc., Fort Worth, Tex., and all subsidiaries of Aviation Corp., 122 E. 42nd St., New York, including Colonial Western Airways, Inc., 270 Madison Ave., New York; Canadian-Colonial Airways, Inc.; Northern Air Lines, Inc.; Central Air Lines Co.; Braniff Airline, Inc.; Continental Air Lines, Inc. Union Trust Bldg., Cleveland, Ohio; Robertson Aircraft Corp., St. Louis; Texas Air Transport, Inc., and Southern Air Transport Flying Service, Inc., both Fort Worth, Tex., and Gulf Coast Airways, Inc.

Miss., Corinth—Chamber of Commerce and National Airways Systems, S. F. Tannus, Pres., Peoria, Ill., secured option on 140-acre site; National Airways Systems plans establishing chain of airports connecting Minneapolis, Minn., and New Orleans, La.; erect hangar, machine shop and equip field with 3 planes for flying students.

Okla., Oklahoma City—Ranger Aircraft Corp., F. M. Durland, formerly Coffman Monoplane Co., 2121 Westwood Blvd., plans expanding plant to manufacture German-American made 40-passenger Pullman plane.

Tenn., Chattanooga—City plans expending \$250,000 to complete municipal airport. 8-8

Tex., Corpus Christi—City, Secretary's Office, City Hall, opens bids Feb. 21 for erecting complete, on municipal airport, frame and stucco combination office and waiting room; corrugated iron hangar, 80-ft. span, 100-ft. length, clear height of 18 ft., 20x25 ft., with windows, doors, ventilators, etc.; alternate proposals to be received on steel and corrugated iron hangar, 90-ft. span x 110 ft. length, clear height 18 ft., with doors, windows and ventilators. -0-31-29

Va., Langley Field, Hampton — National Advisory Committee for Aeronautics, Navy Bldg., Washington, D. C., let contract to J. A. Jones Construction Co., Commercial Bank Bldg., Charlotte, N. C., for full scale wind tunnel, at \$371,700. 1-30

Va., Langley Field, Hampton — Following have sub-contracts in connection with sea-plane channel of National Advisory Committee for Aeronautics, Navy Bldg., Washington, D. C.: Asbestos cement (Careystone), Philip Carey Co., Lockland, Ohio; steel frame

for canopy, rein. steel, Trusecon Steel Co., Youngstown, Ohio; cement, sand, gravel, Benson Phillips Co.; to be used for testing sea-planes, conc. channel approx. 2060x28 ft., 16 ft. deep, covered with steel frame and asbestos roofing and siding; includes offices and shop space; W. P. Rose Co., Contr., Wayne Natl. Bank Bldg., Goldsboro, N. C. 1-30

Bridges, Culverts and Viaducts

Proposed Construction

Ala., Bay Minette—Baldwin County will construct fills and approaches to its end of Perdido Bay toll bridge, to be built by Escambia County, Florida, connecting both counties; cost about \$200,000.

Ark., Monette—St. Louis-San Francisco Ry., F. G. Jonah, Ch. Engr., St. Louis, Mo., will build 2 creosoted timber trestles, $\frac{1}{2}$ mi. long, at Big Lake; $\frac{3}{4}$ mi. long at St. Francis River.

Fla., Pensacola — Baldwin County Board, Bay Minette, Ala., signed contract giving Escambia County authority to build \$200,000 toll bridge over Perdido Bay; will sell bonds. 10-17-1929

Ga., Macon—Bibb County Comms. preparing plans for conc. bridge to replace old bridge on Columbus road; S. Robert Shi, County Engr.

Ky., Lexington—Southern Ry. Co., B. Herman, Ch. Engr., Washington, D. C., reported, will build \$186,000 viaduct to eliminate grade crossing on U. S. Highway No. 60.

Md., Baltimore—City, Bd. of Awards, receives bids March 12 for 1400-ft. long, 54-ft. wide steel and conc. bridge over Curtis Creek, asphalt roadway, 150-ft. bascule type draw; estimated cost \$850,000; Henry G. Perring, Engr., Court Sq. Bldg., completed plans; Elmer G. Hammond, Harbor Engr. 12-26

Md., Cambridge—Tidewater Toll Properties, Inc., Henry G. Perring, Pres. and Ch. Engr., Equitable Bldg., Baltimore, promoters of project for bridge across Choptank River near Cambridge, requested authority, Public Service Comsn. to issue 60,000 shares, 7½% cumulative participating preferred stock, 20,000 shares Class A common stock of no par value and 166,767 shares Class B common stock; total authorized capital of company is 100,000 shares, preferred, aggregating \$1,000,000, with 2 blocks of common stock, one of no par value and other of value of 1 cent each; plans using proceeds of stock sale to construct bridge across Choptank River from point near Cambridge, Dorchester County, to point in Talbot County; bridge 7800 ft. long, with 2000 ft. fill, 150 ft. swing span for navigation, 5600 ft. trestle, 18 ft. roadway; I-beam stringers on timber pile bents; cost about \$512,000, if span terminates in Cambridge; \$336,000 for site some distance from city. 6-7-29

Md., Laurel—State Roads Comsn., Baltimore, received low bid from A. C. Conaway, Savage, \$13,668, to extend 3 bridges in Prince George's County, on Baltimore-Washington Blvd.; north and south of Laurel; G. Clinton Uhl, Chmn.

Missouri—State Highway Dept., Jefferson City, considering 3 bridges: Stone County—1500-ft. bridge over lake formed by dam on White River at Table Rock, Route 43, I-bar suspension structure with conc. substructure, cost about \$300,000; Butler-Stoddard Coun-

ties, 2940-ft. bridge St. Francis River, Route 60, conc. and creosoted substructure, conc. timber and steel superstructure, cost \$120,000; Lafayette County—325-ft. bridge over Little Sni-a-Bar Creek, Route 26, cost \$42,000; T. H. Cutler, Ch. Engr.

Missouri—State Highway Dept., receives bids for 31 bridges. See Roads, Streets, Paving.

Miss., Belzoni—Humphreys County Bd. of Supvrs., A. R. Hutchens, Clk., receives bids Mar. 3 for bridge across Drainage Ditch No. 55, Pluck road, Beat No. 1; C. E. Miller, Engr.

Missouri—State Highway Dept. received low bids for 16 bridges. See Roads, Streets, Paving.

N. C., Charlotte—City, Edgar Read, Clk., plans expending not over \$100,000 to widen, extend, etc., North Tryon St., underpass, under tracks of Southern Ry. Co.; receive bids about March 1. See Financial News Columns. 1-16

N. C., Elizabeth City — State Highway Comsn., Raleigh, plans receiving bids soon for bridge over Pasquotank River at Elizabeth City, on Route 34, from Elizabeth City via Camden, Sligo, Moyock, toward Norfolk, Va.

Okla., Durant—State Highway Dept., Oklahoma City, plans underpass under Missouri, Kansas & Texas R. R., at Wassetta Switch, Bryan County, cost \$30,000; A. R. Losh, State Highway Engr.

Tenn., Gallatin — Maj. Frank S. Besson, Dist. Engr., hold public hearing Feb. 25, in office of U. S. Engr., on application of Dept. of Highways and Public Works, Nashville, for bridge across Cumberland River at Gallatin waterworks, upstream from Woods Ferry.

Tenn., Maryville — Maryville and Alcoa, Blount County, considering viaduct uniting 2 cities over which new highway crossing Cherokee bridge at Knoxville would enter Maryville.

Texas — State Highway Comsn. received bids for 5 bridges. See Roads, Streets, Paving.

Tex., Fort Worth—Texas & Pacific Ry. Co., E. F. Mitchell, Ch. Engr., Dallas, receives bids early in March for Henderson St. underpass, 14-ft. clearance; cost about \$501,000; D. L. Lewis, City Engr. 1-23

Tex., Houston — City, W. E. Monteith, Mayor, and Harris County, Norman Atkinson, County Judge, plan expending \$400,000 for bridges and subways; \$2,662,000, highways and bridges, \$175,000, underpass. See Roads, Streets, Paving.

Virginia—State Highway Comsn., received low bids for 2 bridges. See Roads, Streets, Paving.

Va., Bedford—Town and Norfolk & Western R. R., W. P. Wiltsee, Ch. Engr., Roanoke, considering widening bridge over railroad tracks on North Bridge St.

Va., Narrows — State Highway Comsn., Richmond, plans receiving bids in about 90 days for 1250-ft. bridge over New River near Narrows, State Highway No. 25, Giles County, cost about \$125,000; also for bridge across East River; C. S. Mullen, Ch. Engr.

Va., Norfolk—City Council, I. Walke Truxtun, Mgr., approved general plans for new

steel and conc. Campostella Bridge, with draw, on site of present bridge; 30-ft. roadway, two 5-ft. walks, 16-ft. clearance under closed draw at mean tide level.

Va., Petersburg—See Roads, Streets, Paving.

West Virginia—State Road Comsn. receives bids for 5 bridges. See Roads, Streets, Paving.

W. Va., South Charleston, Charleston—Chesapeake & Ohio R. R. Co., C. W. Johns, Ch. Engr., Richmond, Va., reported, plans railroad bridge on Blaine Island during 1930.

Contracts Awarded

Ga., Augusta—State Highway Bd. of Georgia, East Point, let contract to W. F. Bowe, Jr., 540 Reynolds St., Augusta, \$5701, for Georgia approach to Furey's Ferry Bridge over Savannah River, contract having been let for South Carolina side.

Louisiana—See Roads, Streets, Paving.

N. C., Winston-Salem—C. S. Lee, reported, has contract for underpass under tracks of Winston-Salem Southbound Ry. 1-23

Okla., Altus—Jackson County let contract to Boardman Co., Maple and Hawk Sts., Oklahoma City, \$12,395, for three 80-ft. steel spans on conc. piers, Sec. 1, Mile 6; John W. Riley, Engr., Altus.

Canning and Packing Plants

Fla., Pahokee—Southern Canning Corp., incorporated; E. A. Bass, E. C. Rice.

Fla., Tampa—Florida Canning Corp., incorporated; M. G. Gibbons, Jr., 823 S. Delaware Ave.

Ga., Odum—E. L. Hutton, reported, build canning plant, daily capacity 5000 cases.

Va., Churchland—Churchland Canning Co., incorporated; A. Amdusky.

W. Va., Elm Grove, Wheeling — E. M. Glessey, W. B. Casey and associates interested in establishment of cannery.

Clayworking Plants

Fla., Barth—Clay Products Co., care of W. R. Taylor Co., Mauresa St., Pensacola, erect plant, daily output 200 tons brick and tile; steel and galv. metal; conc. floors; metal roof; install \$20,000 machinery, including steam shovel, gasoline engine, etc. See Want Section—Machinery and Supplies. 2-13

Tenn., Columbia—Columbia Brick Co. incorporated; Robt. Lee Vaughan, Dixon Sewell; reported, acquired plant in Riverside; plans improvements, including reconstruction of 2 kilns, capacity 250,000 brick each.

Coal Mines and Coke Ovens

Ky., Pineville—Chas. C. Steward Machine Co., Prince DeBardleben, Sec. P. O. Box 1191, Birmingham, Ala., advises has contract for all-steel tippie, all-steel belt gallery, rotary car dumper, belt to be 48 in. wide and to deliver 500 tons hourly to 5 tray tippie for Harlan-Wallins Coal Co., Harlan; Good-year Tire & Rubber Co., Akron, Ohio, has contract for conveyor belt; Link-Belt Co., 300 W. Pershing Rd., Chicago, Ill., belt idlers. 2-13

Va., Bonny Blue—Blue Diamond Coal Co., Holston Bank Bldg., Knoxville, Tenn., has development under way involving approx. \$1,000,000; following have contracts: Champion Bridge Co., Wilmington, Ohio, top house with large steel bins, steel structure and steel approaches at top; Fairmount Mining Machinery Co., Fairmount, W. Va., 2 flight conveyors, total length approx. 2400 ft., steel construction throughout; Stevens Adamson Mfg. Co., Oliver Bldg., Pittsburgh, Pa., section consisting of about 1400 ft. of belt conveyor in steel structure and steel and conc. foundations; Fairmount Mining Machinery Co., storage bin tippie screens, picking tables and loading booms for preparations of several grades of bituminous coal loading on 4 tracks; from top to bottom work will coordinate making continuous unit; tunnel work and other development at mine by company's forces; railroad construction now under contract to local contractors; supply incline and manway incline by company's forces; village being built by local contractors; walkway in conveyor and floor of tippie of fireproof rein. conc.; mining machinery being purchased as needed; 2 mine tipples to have capacity of about 1,500,000 tons yearly. 6-6-29

Concrete and Cement Plants

La., Lake Charles—Concrete Pipe Products Co., Inc., capital \$25,000, incorporated; C. L. Briggs, 704 Payo St.

Cotton Compresses and Gins

Miss., Myrtle—McBryde Gin, New Albany, will erect building for engine room; install oil engine and ginning machinery; construction by owner. 2-13

Drainage, Dredging and Irrigation

La., Denham Springs—Drainage Commrs., Livingston Parish plan draining 70,000 acres in Second and Seventh Wards.

La., New Orleans—Ch. of Engineers, U. S. Army, Washington, D. C., authorized dredging 8,819,000 cu. yd. material in Louisiana-Texas Waterway; U. S. Engr. Office, foot of Prytanis St., soon call for bids.

N. C., Beaufort—U. S. Engr. Office, Wilmington, opens bids Mar. 20 for dredging approx. 486,234 cu. yd., Section IV, Intracoastal Waterway, Beaufort to Cape Fear River. (Wilmington, 1-23)

N. C., Taylorsville—Bd. of Commrs., Alexander County Drainage Dist. No. 2 opens bids Mar. 4 for ditch approx. 4½ mi. long; N. A. Trexler, Engr., Salisbury.

Tex., Freeport—U. S. Engr. Office, Galveston, opens bids Mar. 14 for dredging approx. 2,000,000 cu. yd. from Freeport Harbor.

Tex., Houston—City, B. C. Allin, Director of Port, set Mar. 22 as tentative date for voting \$2,923,000 bonds for Houston and Harris County Navigation Dist. 12-5

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Alabama — Commonwealth & Southern Corp., B. C. Cobb, Chrmn. of Bd., 20 Pine St., New York, announced, stockholders of Commonwealth & Southern Corp., Allied Power & Light Corp., 20 Pine St., New York City, Penn.-Ohio Edison Co., 20 Pine St., N. Y., each approved plan of merger and consolidation of Commonwealth & Southern Corp., Allied Power & Light Corp., Commonwealth Power Corp., 20 Pine St., N. Y., Penn.-Ohio Edison Co., and Southeastern Power & Light Co., 120 Broadway, N. Y., and also approved agreement of merger and consolidation of 3 companies incorporated in Delaware, that is the Commonwealth & Southern Corp., Allied Power & Light Corp. and Penn.-Ohio Edison Co., thus completing first step in simplification of corporate structure of Commonwealth & Southern System; meetings of stockholders of main corporations, that is Commonwealth Power Corp., and Southeastern Power & Light Co., over 90% of common stock of which corporations is already owned by Commonwealth & Southern Corp., also ratified plan. 12-5

Fla., Williston—Florida Power Corp., St. Petersburg, reported, furnish city power for 5 yrs.; construct power line from sub-station north of here to present plant; install transformers, etc.

Ga., Nashville—Columbus Electric & Power Co., Columbus, reported, extend line into Nashville.

Ky., Paducah—City, reported, having plans prepared for power plant.

La., New Orleans—See Sewer Construction.

Md., Centreville—Town granted permission by Public Service Comsn., Baltimore, to construct electric light and power line along Centreville-Easton State Rd., distance of 6 mi., to Wye Mills.

Missouri—The Management and Engineering Corp., 327 S. LaSalle St., Chicago, Ill., advises regarding Missouri Electric Power Co.'s hydro electric development on Current River in Carter County: "We have merely filed an application with the Federal Power Comsn. for preliminary permit for investigation of this development; consequently we have no plans as to the development of this site." C. M. Stanley, Asst. Hydraulic Engr. 2-6

Mo., Campbell—City, D. A. Snider, Clk., plans electric light system; \$20,000 bonds available. 1-2

Mo., Kirksville—City will probably contract with local public utility for light and power; plan of calling election for building lighting plant tabled. 2-13

N. C., Nebo—Town plans installing light and power system, sold bonds.

Oklahoma—Public Service Co., Oklahoma City, reported, granted 25 yr. franchise at Hitchita and Hoffman; construct 11½-mi. power line from Bartlett to supply both towns; cost \$25,000.

Okla., El Reno—El Reno Independent Light & Power Co., incorporated; L. L. McCurley, J. L. Trevatnan.

Okla., Oklahoma City—See Telephone Systems.

Okla., Purcell—See Sewer Construction.

Tex., Waelder—City considering installing light and power plant.

Okla., Weleetka — W. R. Grimshaw Co., Kennedy Bldg., Tulsa, has general contract for power plant for Public Service Co. of Oklahoma, Tulsa. 1-30

Tenn., Memphis—State Railroad and Public Utilities Comsn., Nashville, reported, granted permission to Memphis Power & Light Co. to issue \$2,500,000 of 5% bonds to be used to retire \$1,250,000 outstanding bonds and reimburse treasury for expenditures made and to be made in Memphis newly annexed territory. 1-23

Fertilizer Plants

S. C., Greenville — Planters Fertilizer & Phosphate Co., 143 E. Bay St., Charleston, reported, plans rebuilding fertilizer plant burned at loss of \$500,000.

Flour, Feed and Meal Mills

Mo., St. Louis—Meyer Milling Co., Merchants Exchange, alter flour plant at 719 Howard St.; Howard P. Lipman, Bldr., 12 Lewis Place.

Foundry and Machine Planis

Ala., Birmingham—Chicago Bridge & Iron Works, 37 W. Van Buren St., Chicago, Ill., completed negotiations for purchase of steel fabricating plant of Reeves Bros. Company, involving \$500,000 plant with capacity of 50,000 tons annually; plans substantial improvements. 1-23

Okla., Cushing—F. M. Wiseley Lock Joint Steel Derrick Corp., capital \$50,000, incorporated; T. J. Hughes, Jr., W. A. Drake.

Okla., Tulsa—National Tank Co., Joe Station, erecting tank fabricating plant addition; 50x100 ft.

Okla., Tulsa—Patterson Steel Co., 801 N. Xanthus St., erect addition to office and engineering departments; 2 story, 44x88 ft.

Tenn., Chattanooga — Lucy Mfg. Corp., 19th and Grove Sts., expend \$50,000 for new equipment at oil machinery and boiler plant.

Tex., San Antonio—San Antonio Machine & Supply Co., 325 N. Center St., opens bids Feb. 25 for addition; 2 story, rein. conc. steel roof; Herbert S. Green, Archt., Alamo Bank Bldg.; W. E. Simpson & Co., Engrs., Milam Bldg.

Va., Charlottesville—Walker Foundry Co., Inc., capital \$20,000, chartered; Charles M. Walker.

W. Va., Huntington—West Virginia Foundry & Stove Co., acquired Treasure Stove Co., Gallipolis, Ohio, and will move physical properties here; broke ground for first of 2 additional buildings, Fourth Ave. and 24th St.

Garages and Filling Stations

Ala., Birmingham—Shell Petroleum Corp., Martin Bldg., Birmingham, and Shell Bldg., St. Louis, Mo., let contract to Moss Construction Co., St. Louis, Mo., for filling station, Tenth Ave. and 26th St. standard steel building to be shipped here ready for erection.

Fla., Miami—Atlantic Refining Co., 260 S. Broad St., Philadelphia, Pa., started erecting \$27,000 service station, W. Flagler at 15th Ave., with own forces; brick, conc. block, stucco.

Ga., Atlanta—Shell Petroleum Corp., Rhodes Haverly Bldg., Atlanta, and Shell Bldg., St. Louis, Mo., let contract to Moss Construction Co., 265 Delta Pl., S. E., Atlanta, and St. Louis, Mo., for \$18,000 bulk depot, Delta Pl., S. E., and for stations costing \$31,200, 318 Moreland Ave., N. E., 286 Capitol Ave., S. E., 806 Spring St., N. W., 228-32 Central Ave., S. W., 345 Park Way Dr., N. E., 864 Gordon St., S. W., 652 Washington St., S. W., 5 Courtland St., N. E.; conc. footings, brick, comp. roof, struct steel. 1-16, 2-13

Ky., Covington—Gough Motor Car Co., capital \$20,000, incorporated; Robert Brunsmann, Maurice L. Galvub.

La., Monroe—Louisiana Oil Refining Corp., 9th St., has plans out for filling station addition, Fairfield Ave. and Jordan St.; H. C. Bellows, Ricon-Brew Bldg., K. C. Wilson, Slattery Bldg., and M. C. Brown, City Bank Bldg., all Shreveport, estimating on general contract.

La., New Orleans—Haydel-Laseigne Corp., capital \$15,000, incorporated; L. A. Haydel, 3136 Gentilly Rd.; filling station, etc.

La., Port Allen—Quick Service, Inc., capital \$12,000, chartered; Mrs. Adele B. Vavasour.

Md., Baltimore—Webster W. Griebel, 814 Light St., let contract to C. E. Parsley, 1536 N. Gay St., for \$25,000 garage, Light St.; 2 story, brick; P. T. Bond, Archt., 2600 Ednor Rd.

Miss., Meridian—Reliance Motor Co., Inc., Willard Rosenbaum, Pres., 27th Ave., may erect automobile building in about 6 months.

Miss., Natchez—Allendale Heights Co., H. Kendall, Local Mgr., Shreveport, started preliminary construction on modern service station, car storage and automobile garage and agency building, Franklin and Wall St.

Miss., Yazoo City—Woolwine & Hull, Ford Dealers, acquired site, Washington St., for \$40,000 automobile building; 1 story, brick, conc.; N. W. Overstreet, Archt., Jackson.

Mo., Kansas City—Firestone Tire & Rubber Co., 2001 Grand Ave., and Akron, Ohio, take bids now for \$100,000 super service tire and filling station, Grand Ave. and 20th St.; C. A. Smith, Archt., 1009 Baltimore Ave. 1-16

Mo., Kansas City—Peake Supply Co., capital \$94,182, incorporated; C. A. Peake, Jr., 6139 McGee St.; auto supplies, etc.

Mo., St. Louis—Franks Garage & Service Station, Inc., capital \$40,000, chartered; Geo. Leffer, 6307C Clayton St.

N. C., Charlotte—General Tires, Inc., recently formed by A. M. Alken, Birmingham, Ala., and W. B. Burwell, Atlanta, Ga., erect \$20,400 service station and tire distributing center, Church and E. Fourth St., beginning construction Mar. 1.

N. C., Roanoke Rapids—Shearin Motor Co., Inc., capital \$50,000, chartered; N. M. Shearin, Weldon; H. H. White, Roanoke Rapids.

N. C., Winston-Salem—Texas Oil Co. plans filling station, Waughtown St., near Light St.

N. C., Winston-Salem—W. M. Nissen, Nissen Bldg., has permit for filling station, Marshall St., near Second St.

S. C., Spartanburg—R. W. Scott, 613 Poplar St., has permit for filling station, Broad and Wall St.

Tenn., Chattanooga—Clary-Rent-A-Car System, S. S. Price, 615 Cherry St., erect addition to building.

Tenn., Chattanooga—Bill Jones Auto Co., W. A. Jones, 341 Chestnut St., increasing capital, \$50,000 to \$100,000.

Tenn., Nashville—Firestone Tire & Rubber Co., Akron, Ohio, care Hancock Tire Service Co., 904 Broad St., Nashville, let contract to J. B. Hanson Co., 769 Vance St., Memphis, for service station, West End and 25th Ave., Elliston Pl.; Marr & Holman, Archt., Stahlman Bldg. 1-30

Tex., Beaumont—Shell Petroleum Co., Shell Bldg., St. Louis, Mo., soon erect 12 filling stations; \$10,000 distributing plant, with 4 large tanks, being erected on Missouri Pacific tracks near Crockett and Fifth St.

Tex., Harrisburg—Consolidated Oil Co., W. C. Czigan, Sec., 2905 McKinney St., Houston, acquired property, La Porte Rd. and Broadway, known as Miles Service Station; to be converted into large filling station.

Tex., Houston—J. H. Jones, Bankers Mortgage Bldg., reported, taking bids on \$300,000 garage, Rusk and Travis St.; 4 story, basement, 100x177 ft., rein. conc.; A. C. Finn, Archt., R. J. Cummins, Engr., both Bankers Mortgage Bldg.

Tex., Junction—Highland Chevrolet Co., capital \$42,000, incorporated; J. S. Farmer.

Tex., Lubbock—B. E. Needlew, 1811 Eighth St., let contract to Rigney Ferguson, Lubbock, at \$27,500, for filling station, Ave. H and 15th St.; 52x125 ft., brick, 1 story and balcony, conc. foundations.

Tex., Weatherford—Hays Motor Co., capital \$450,000, incorporated; J. C. Hays, J. P. Williams.

Va., Petersburg—Atlantic Refining Co., Otis T. Mintree, local representative, start erecting service station, Sycamore and Bank St., in few weeks.

Va., Tenn., Bristol—States Motor Co., Walter Adams, Mgr., plans rebuilding building burned withh \$45,000 loss.

W. Va., Salem—Meredith Motor Car Co., capital \$75,000, incorporated; W. F. Meredith, Salem.

Gas and Oil Enterprises

Fla., Panama City—Shell Oil Co., Shell Bldg., St. Louis, Mo., reported, construct distributing station.

Ga., Brunswick—Georgia Public Service Co., 75 Marietta St., Atlanta, reported, installing producer; also plans purification system; expend \$31,000.

Ky., Ashland—Ashland Refining Co., reported, construct power plant to develop 1500 h.p.; also install equipment for gasoline extraction plant; completing 3,360,000 gal. storage tank. 9-15

Ky., Henderson—Rivers Oil Co. incorporated; O. T. Dillingham, N. B. Hunt.

La., Lake Charles—Oil Lands Development Corp., capital \$30,000, incorporated; John C. Ayers, Frank Bldg.

La., Morgan City—Test Gasoline & Oil Co., Inc., chartered; Sam Griffin, Thos. W. Randle.

La., Thibodaux—Bd. of Trustees, voted to negotiate with Col. T. M. Phifer, Repr. of New York syndicate for natural gas system.

Miss., Meridian—Meridian Natural Gas Co., A. B. Amis, Princess Bldg., reported, granted gas franchise; gas to be piped into city from Columbus and transmitted through company's present plant. 5-6

Missouri—Stockholders of Missouri-Kansas Pipe Line Co., 820 Dwight St., Kansas City, Mo., voted to increase authorize \$5 par common stock from 700,000 to 5,000,000 shares and to create 5,000,000 shares of \$1 par Class B stock; Bd. of Directors previously approved plans for recapitalization new class B stock equal in amount to present outstanding common stock to be placed in voting trust of which Frank P. Parish, Kansas City, and others are trustees; offering of voting trust certificates to be made at par to holders of common stock, share for share; future B shares to be offered to stockholders pro rata. 2-13

Mo., St. Louis—Missouri Oil Co., Inc., chartered; Harry C. and Harry F. Gerfen, 2909 Shenando St.

N. C., Durham—Durham Gas Co., reported, install high pressure system to supply gas to Duke University; cost \$60,000; preliminary plans include laying 4½ mile gas mains.

N. C., High Point—Marine Oil Co., capital \$125,000, incorporated; W. T. Grant, J. C. Siceoff.

N. C., Lexington—Hinkle Oil Co., capital \$50,000, incorporated; C. S. Leonard, C. R. Sharpe.

N. C., Raleigh—Eastern Petroleum Co., Inc., capital \$50,000, chartered; R. C. Howson, G. E. Bobbitt, 1415 Scale St.

Oklahoma—Transcontinental Oil Co., Tulsa, reported, closed contract for purchase of assets of Fuhrman Petroleum Co., Okmulgee; properties include 36,468 acres in Creek, Hughes, Seminole, Pontotoc counties, etc.

Okla., Blackwell—Lorinda Gas Co., incorporated; Lorinda Wright, Ida Wildgrube.

Okla., Konawa—Swan Royalty Co., capital \$100,000, incorporated; H. Burton, H. W. Courtney.

Okla., Oklahoma City—Henson Oil Corp., capital \$50,000, incorporated; F. R. and J. C. Henson, Petroleum Bldg.

Okla., Oklahoma City—See Telephone Systems.

Okla., Tulsa—United Oil & Gas Co., capital \$25,000, incorporated; Ray S. Fellows, Kennedy Bldg.

S. C., Alken—Georgia Public Utilities Co., Augusta, Ga., reported, granted 40 yr. franchise; will pipe gas from company's plant at Augusta; work to begin in May; expend \$100,000. 10-3

Tenn., Maryville—Tennessee Gas Co., P. J. Martel, Mgr., subsidiary to Utilities Gas & Electric Co., 22 W. Monroe St., Chicago, reported, plans by-products gasoline plant; 1 story; steel and conc.

Tex., Albany—Hart & Gist Producing Co., incorporated; J. L. Hart, A. G. Gist.

Tex., Big Spring—Big Spring Royalty Co., capital \$20,000, incorporated; R. L. Cook, J. T. Brooks.

Tex., Breckenridge—Texas Pacific Coal & Oil Co., Ft. Worth Natl. Bank Bldg., Ft. Worth, reported, construct refinery; capacity 1000 bbls. crude oil daily.

Tex., Dallas—Valvoline Oil Co., incorporated; Edward T. Kelly, 1911 Euclid St.

Tex., LaFeria—LaFeria Oil, Gas & Development Co., capital \$30,000, incorporated; H. J. Nelson, Ed Linberg.

Tex., Pampa—Petroleum Refractionating Corp., Dan Dancinger, Pres., W. T. Waggoner Bldg., Fort Worth, reported, construct refinery.

Tex., Temple—Taylor Temple Oil Co., capital \$30,000, incorporated; W. H. Rowe, L. K. Thomson.

Tex., Waco—Texas Cities Gas Co., Dallas, reported, extend and relay gas mains.

Va., Virginia Beach—Town & County Utilities Co., capital \$300,000, incorporated; Clifford Hosler, Dickson Bldg., Norfolk; lately noted acquired gas franchise. 2-13

W. Va., Athens—Bluefield Gas & Power Co., Bluefield, granted gas franchise; applied for franchise at Princeton, W. Va., Bluefield, Va., and Hinton, W. Va.

W. Va., Kenova—Tri-State Refining Co., Inc., Drawer 368, advises recent fire will not require any extensive rebuilding. 2-13

Ice and Cold-Storage Plants

Ark., Jonesboro—A. A. Brown, Wynne, acquired Home Ice Co., L. C. Castetter; probably add new equipment and enlarge plant.

Ark., Warren—Warren Cotton Oil & Mfg. Co., 207 W. Central Ave., M. C. Stockbridge, Pres., Shreveport, La., installing natural gas engines, ammonia compressor, air compressor, motor driven pumps in ice plant, from Frick Co., Inc., Waynesboro, Pa.; Allis-Chalmers, Milwaukee, Wis., and Bruce Macbeth Engineering Co., Cleveland, Ohio. 2-13

Ga., Atlanta—A. Epstein, Engr., 2001 W. Pershing Rd., Chicago, Ill., take bids in May and June for plumbing, heating, wiring, sprinklers, elevators, refrigerating equipment and insulation in connection with warehouse of United States Cold Storage Co., 2101 W. Pershing Rd., Chicago, Ill.; E. W. Sproul Construction Co., Gen. Contr., 2001 W. Pershing Rd., Chicago, Ill. 1-2

Ga., Atlanta—Atlantic Ice & Coal Co., 106 Collins St., S. E., expending \$50,000 remodeling and enlarging cold-storage plant, Piedmont Ave.; brick, conc.; install fish freezer and room varying from low thirties down to 8 and 10 degrees; when completed new plant will provide 1,600,000 cu. ft. storage space.

Ky., Louisville—Sam S. Wyly has permit for \$20,000 ice plant, 400 S. Shelby St.; 40x70 ft.

La., Jonesboro—Clarence J. Pope completing plans for 20-ton ice and cold-storage plant; 50x80 ft., 1 story, steel, conc.; bids being received on ice machinery; E. K. Strahan, Inc., Const. Engr., Pere Marquette Bldg., New Orleans, La.

Miss., Pascagoula—Pascagoula Cold Storage & Ice Co., Inc., W. L. Lindinger, Pres., newly organized, soon start erecting \$45,000 ice and cold-storage plant; receive bids in few days; 1 story, conc., 48x91 ft., produce 25 tons daily, store 150,000 to 200,000 lb. seafood; E. K. Strahan, Inc., Const. Engr., Pere Marquette Bldg., New Orleans, La.

Mo., Lamar—Lamar Ice & Fuel Co. install 100-h. p. oil engine from Empire District Electric Co., Joplin, and 8x8 in. ice machine from York Ice Machinery Co., York, Pa.

Okla., Oklahoma City—See Telephone Systems.

Iron and Steel Plants

Ala., Birmingham—Tennessee Coal, Iron & Railroad Co., William C. Ryding, Pres., Brown-Marx Bldg., reported, establish sheet mill, using continuous rolling patent; J. A. Farrell, Pres., United States Steel Co., 71 Broadway, New York, advises: "Matter of extending our sheet mill capacity at Birmingham is under consideration, but no definite decision has as yet been arrived at."

Ala., Gadsden—Gulf States Steel Co., W. H. Coverdale, Pres., Brown-Marx Bldg., Birmingham, announced plans for expending \$17,000,000 to \$20,000,000 for additions to mills here; includes 37 by-product ovens, 4 open hearth furnaces, new blast furnace and new stoves for old furnace, opening new coal and ore mines, requiring 3 to 4 years; \$2,000,000 plate mill nearing completion, \$1,000,000 blooming mill being installed; just let contract to F. H. McGraw & Co., 51 E. 42nd St., New York, for \$2,500,000 sheet mill. 1-2

Tenn., Knoxville—Knoxville Iron Co., expend \$20,000 for blanket repairs to plant, Lonsdale.

Land Development

Ala., Montgomery—Weil Realty Co., capital \$40,000, incorporated; Thornton Clark, 605 Fairview Ave.

Fla., Live Oak—See Miscellaneous Enterprises.

Fla., Miami—Markley Properties, Inc., chartered; G. L. Clark, 1411 N. W. 1st St.

Fla., Miami—Garland Farms, Inc., incorporated; G. M. Budd, Jr., 510 S. W. 13th Ave.

Ky., Pikeville—Rogers Realty Co., capital \$50,000, incorporated; F. Rogers, W. T. Huffman.

La., Lake Charles—Hill Top Farm Co., Inc., capital \$20,000, chartered; G. A. Courtney, Pajo St.

La., Shreveport—Scott Estate, Inc., capital \$350,000, chartered; Randle T. Moore, Commercial Natl. Bank.

Mo., Kansas City—Indian Realty Co., incorporated; Robert T. Sloan, Jr., 918 Scarritt Bldg.

Mo., Kansas City—Regal Realty Co., incorporated; B. J. Murphy, 819 Scarritt Bldg.

Mo., St. Louis—David P. Leahy and Stedelin Bros., 823 N. 4th St., reported, develop 22 acre subdivision west of S. Kingshighway Blvd.; plans installing \$100,000 improvements under direction of Myers, Byers & Keller, Engrs., 717½ Chestnut St.

Mo., St. Louis—Alma Realty & Investment Co., incorporated; James V. Dunbar, 317 N. 11th St.

N. C., Raleigh—Parkers Inc., capital \$25,000, incorporated; F. W. Parker, 15 E. Martin St.

Okla., Oklahoma City—T. H. Blume, American National Bank Bldg., develop 315 acres on E. 29th St., S.

Tex., Houston—Southgate, Inc., John A. Embry, Pres., 1501 W. Alabama St., develop 100 acre subdivision south of city.

Tex., Houston—See Water Works.

Tex., Houston—J. E. Josey of National Standard Insurance Co., develop 7½ acres on Galveston Highway; landscape, develop for suburban estate.

Tex., McAllen—A. J. McColl, Inc., chartered; A. J. McColl, F. E. Breeding.

Va., Fredericksburg—E. G. Heflin Co., Inc., capital \$25,000, incorporated; E. G. Heflin.

W. Va., Huntington—North Kenova Development Co., capital \$75,000, incorporated; W. R. Ritter, R. D. Campbell.

Lumber Enterprises

Ark., Helena—Ambarwood Mfg. Co., Box 138, receiving estimates for erecting additional Sampson patent steaming cylinders, 130x9 ft., here and at other sawmills.

Fla., St. Augustine—Klinskern & Co., Inc., chartered; L. B. Klinskern, L. J. Tatum.

Ga., Pavo—King Lumber Co., Chas. B. King, Mgr., Cuthbert, advises decided to postpone erecting mill for about 12 months. 2-13

La., Ferriday—J. M. Jones Lumber Co. advises office, sawmill planing mill and dry kilns burned with loss of about \$150,000; plan starting rebuilding soon; also erect small band mill in Mississippi at early date.

Mississippi—See Ferriday, La.

N. C., Mount Airy—Perry Lumber Co., capital \$100,000, incorporated; H. C. Cornett, James W. Feaster.

S. C., Greenville—National Lumber Co., capital \$20,000, incorporated; F. A. Lawton, 620 E. McBee Ave.

Tenn., Knoxville—Tennessee Tie Co., capital \$25,000, incorporated; W. W. Piper, Empire Bldg.

Tenn., Memphis—W. M. Coyle, 1191 Vance St., acquired North Side Lumber Co.

Tenn., Murfreesboro—Bell Bros. & Co. started erecting \$30,000 lumber and building supply plant, W. Main and Front St.; 2 story, factory type construction, cream face brick, black face brick trim.

Tex., Arlington—J. & C. Lumber Co., capital \$20,000, incorporated; J. L. Clarkson, G. J. Jarrell.

Tex., Perrin—Perrin Lumber & Supply Co., capital \$12,000, incorporated; C. P. Clayton, J. E. Moore.

Tex., San Antonio—Ed. Steves & Sons, 710 E. Commerce St., acquired lumber and other building materials at Steves Yards, operated by San Antonio Building Materials Co.; to be operated under name of purchasing company.

Metal-Working Plants

Fla., Jacksonville—Continental Can Co., Inc., 1 Pershing Square, New York, acquired plant of American Export Motors, Grand Blvd. and Southern Ry., for branch plant; portion of necessary machinery to be purchased, other to be transferred. 2-13

Mining

Ky., Wheeler—Knox-Jellico Mining Co. incorporated; B. W. Whitfield.

Texas—Texas Potash Corp., Dallas, soon start producing potash on extensive scale in Midland area, as result of discovery by E. P. Schoch, Director Bureau of Industrial Chemistry, University of Texas, of method for refining polyhalite ores.

Tex., Waco—St. Louis Smelting & Refining Co., International Life Bldg., St. Louis, Mo., secured option to acquire properties of High Five Mining Co. and American Zinc Co. in Waco Dist., consisting of 80 acres in fee and 110 acres in lease, with mine and mill; purchaser to be allowed to construct central mill to handle tonnage from various holdings.

Miscellaneous Construction

Md., Rising Sun—Chester County Council Boy Scouts of America, West Chester, Pa., opens bids Feb. 24 for conc. work and piping in connection with constructing swimming pool, Horseshoe Camp; 50x150 ft., conc., complete with filter plant; has low bid from American Water Softener Co., 4th & Lehigh Ave., Philadelphia, Pa., for filter plant; pool to be in operation by June 1; Jefferis and Weiler, Const. Engr., 322 W. Market St., West Chester, Pa.

Missouri—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, let contract to Ervin Bourgois, Bismarck, N. D., for 2000 lin. ft. standard revetment and 400 lin. repairs to standard revetment, Ft. Berthold Reach and Deapolis Bend. 1-23

Missouri—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, let contract to List & Weatherly Construction Co., Ry. Exch. Bldg., Kansas City, for 5000 lin. ft. standard pile clump dikes, St. Albans Bend. 11-28-29

Missouri—U. S. Engr. Office, Customhouse, St. Louis, opens bids Mar. 6 for constructing 13,000 cu. yd. earth work in levee repair in Perry County, Levee & Drainage Dist. No. 3.

Missouri—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, let contract to Kansas City Bridge Co., 510 Orear-Leslie Bldg., Kansas City, for 4300 lin. ft. standard pile clump dikes and 2000 lin. ft. standard revetment.

Mo., Chamolais—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, let contract to Bilhorn, Bower & Peters, Inc., 1811 Ry Exch. Bldg., St. Louis, for 1100 lin. ft. standard pile clump dikes and 2300 lin. ft. standard revetment. 11-21

Mo., Gasconade—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, let contract to Ross-Wogan & Co., 908 W. 25th St., Kansas City, for 9500 lin. ft. standard pile clump dikes. 11-28

N. C., Greensboro—City, Luther E. Dempsey, Ch. of Sanitary Dept., has low bid from Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., for incinerator addition. 1-16

N. C., Raleigh—North Carolina Div., United Daughters of the Confederacy will not receive bids before July 1 for pavilion in Confederate Cemetery; James A. Salter, Archt., Professional Bldg. 2-13

Tex., Galveston—James A. Boddeker, County Commr., announced plans for placing conc. slab surface on rocks of south jetty to provide deep water fishing pier 2 mi. long.

Tex., Galveston—Galveston Wharf Co., F. W. Parker, Gen. Mgr., has foundation work complete for 6,000,000 bu. grain elevator, and work on superstructures progressing rapidly, to be completed to handle 1930 crop; following have additional sub-contracts: Induction motors, transformers and switchboard equipment, General Electric Co., Mo., and Schenectady, N. Y.; waterproofing and painting, O. H. Mann & Co., both Dwight Bldg., Kansas City, Mo.; grain hopper scales, Fairbanks-Morse & Co., 900 S. Wabash St., Chicago, Ill., and Kansas City, Mo.; silent and roller chain drives, Link-Belt Co., Indianapolis, Ind., and Kansas City, Mo.; grain driers, O. W. Randolph Co., Toledo, Ohio; bin thermometers, Zeleny Thermometer Co., 542 S. Dearborn St., Chicago, Ill.; speed reducers, Falk Corp., Milwaukee, Wis.; electric power to be furnished by Galveston Electric Co., 2116 F St.; contracts now awarded for all major items; Jones-Hettelsater Construction Co., Gen. Contr., Mutual Bldg.; Horner & Wyatt, Const. Engr., Bd. of Trade Bldg., both Kansas City. 2-13

Tex., Houston—City, B. C. Allin, Director of Port, set Mar. 22 as tentative date for voting on \$1,500,000 bonds for enlarging grain elevator. 2-13

Tex., Houston—City, B. C. Allin, Director of Port, set Mar. 22 as tentative date for voting on \$400,000 bonds for wharf additions.

Tex., Port Arthur—City let contract to W. Horace Williams Co., Inc., 833 Howard Ave., New Orleans, La., for first unit of sea wall, at \$798,714; J. B. Converse & Co., Inc., Engr., Industrial Bldg., Port Arthur, and State Office Bldg., Mobile, Ala. 2-13

Miscellaneous Enterprises

Ala., Birmingham—Warrior Terminal Co., T. Q. Ashburn, Pres., Brown-Marx Bldg., plans expending \$150,000 for 50 to 60 cars to operate between Birmingham and Birminghamport; bids to be asked at once.

Ala., Montgomery—Dr. Pepper Bottling Co., J. W. Link, Pres., 401 Main St., Dallas, ordered equipment for bottling plant, Monroe St.; establish eyrup plant.

Ark., Little Rock—Sealy Mattress Co., Harold L. Amster, Mgr., Woodsweater & Santa Fe Sts., Kansas City, acquired Little Rock Mattress Co., 1710 E. Ninth St., and reorganizing as Sealy Mattress Co. of Arkansas.

Fla., Live Oak—Fred Green, of Home Hardware & Furniture Co., plans planting 100,000 tung oil trees; seed on hand; seed beds to cover over 20 acres.

Fla., Ocala—William Dwyer, 423 W. 141st St., New York, reported, acquired Kenney Park racing plant.

Fla., Ocala—Ocala Banner, Inc., chartered; Frank Harris, 309 E. Third St.; newspaper business.

Fla., Miami—Merrill-Stevens Co., 1270 N. W. Eleventh St., applied to City Comm., for permission to construct \$150,000 floating dry dock; 2500 tons capacity, for repairing yachts.

Fla., Tallahassee—Philips Turpentine Co., capital \$30,000, incorporated; V. G. Philips, Tallahassee; H. A. Lurton, 816 E. Blount St., Pensacola; acquired large lease holds and will engage in producing gum turpentine and rosin; secured buildings and machinery need except various repairs; employ 120.

La., Alexandria—A. Wettermark, 507 Beauregard St., digging trenches for \$15,000 building, Fourth St. between Jackson and Beauregard St.; 52x104 ft., 1 story; Standard Printing Co., Lessee.

La., Lake Charles—American Southern Life Insurance Co., Lake Charles, and Great Southern Life Insurance Co., Houston, Tex., merged.

La., Newellton—Melton Construction & Supply Co., Inc., capital \$50,000, chartered; C. W. Melton, J. P. Mason.

La., New Orleans—Economy Iron Works, Inc., P. S. Barbalich, Pres., 643 S. Peters St., increasing floor space to care for marine repair and sheet metal business.

La., New Orleans—Jeff's Candy & Novelty Co., Inc., capital \$15,000, chartered; V. N. Henriques, 2504 Milan St.

La., New Orleans—Rex Ice Cream Co., Inc., chartered; J. M. Schorr, 421 Seguin St.

La., Shreveport—Neon Sign Corp., capital \$25,000, incorporated; Hollace H. Bain, 808 Reynolds St.

La., Shreveport—W. R. and F. R. Chadick, 625 Kings Highway, drawing plans for remodeling 1-story brick building, Strand Ave.; Home Laundries, Inc., Lessee; M. D. Weeks, Archt., Ardis Bldg.

Md., Baltimore—Guilford Folding Box Co., Carrie E. Simpson and associates, Eager St. and Fallway, acquired building, Ashland Ave. and Haven St.; 30,000 sq. ft. floor space; abandoned plans for erecting plant, 13th St. and Philadelphia Rd. 10-31

Md., Baltimore—Belmont Iron Works, 22nd and Washington St., Philadelphia, Pa., has contract for 600 tons structural steel for reel yard crane runway of Western Electric Co., 195 Broadway, New York, at Point Breeze; H. K. Ferguson Co., Gen. Contr., Hanna Bldg., Cleveland, Ohio. 7-4-29

Md., Baltimore—Detroit Dyers & Cleaners, Inc., 3105 Kate Ave., chartered; George W. Radcliffe.

Miss., Pascagoula—Seranton Fish Co. start-er erecting building, Delmas Ave., to include conc. wharfs, loading ramps and other facilities for handling fish.

Miss., Vicksburg—U. S. Engr. Office, John C. H. Lee, advises hydraulic laboratory to be erected by this office for Mississippi River Comsn. and will operate directly under president of commission; negotiating for site;

construct dam 20 ft. high, 400 ft. long to impound reservoir of about 40 acres; construct laboratory below dam, 50x215 ft., simple factory design with many windows, 2-story offices and shops at ends; working laboratory 1 story; common brick, struc. steel, conc. floors, hydraulic flume, return channel, sand catcher and deep reservoir of conc.; dam to be constructed first. 1-16

Mo., Carthage—Missouri Farmers Association raising funds for \$150,000 whole milk plant.

Mo., Fredericktown—Crossfield Ice & Battery Co., capital \$35,000, incorporated; H. S. Crossfield, Fredericktown; W. Crossfield, Lawrenceburg, Ky.

Mo., Kansas City—Mac-Ad-Co., capital \$50,000, incorporated; E. C. Jones, 2333 Harrison St.; electrically operated mechanical devices.

Mo., Kansas City—Monkey Steam Dye Works Co., acquired E. & F. Cleaning & Dyeing Co., 3027 McGee Rd.

Mo., St. Joseph—Morrison System, Inc., W. G. Morrison, Pres., Dayton, Ohio, may erect \$60,000 reduction plant; 1 story, brick.

Mo., St. Louis—American Appliance Corp., capital \$50,000, incorporated; G. M. DeHoog, 520a N. Sarah St.; electrical equipment, etc.

Mo., St. Louis—Koken Companies, Inc., 3400 Morganford Rd., manufacturer of metal chairs and other metal products, let contract for \$40,000 addition; 1 story, 80 x 100 ft.

N. C., Charlotte—Grinnell Co., Inc., H. B. Johnson, Gen. Plant Mgr., Providence, R. I., advises probably start work about Mar. 15 erecting plant, costing \$125,000 to \$150,000, including site; no contracts let; J. E. Serrine & Co., Engr., 215 Main St. 2-6

N. C., Cherryfield—Blue Ridge Silver Fox Farm and Blue Fox Ranch, Inc., plans 24 fox pens, 20x16 ft., with guard fencing 12 ft. high; refrigeration plant, other buildings; \$75,000.

N. C., Rocky Mount—Underwriters Fire Insurance Co. of Rocky Mount being formed by merger of Underwriters Fire Insurance Co. and North Carolina State Fire Insurance Co.; M. R. Braswell, Pres.; C. W. Coghill, Sec.

N. C., Wilmington—Southland Mfg. Co., William Block, 702 N. Front St., shirt manufacturer, erecting addition to shirt plant, increasing floor space, 18,000 to 30,000 sq. ft. brick; install 100 machines.

N. C., Winston-Salem—Crater, Disher & Ketner, Inc., capital \$50,000, chartered; J. M. Crater, 1134 Hutton St., plumbing and heating contractors.

Okla., Ardmore—Dr. Pepper Bottling Co., capital \$50,000, incorporated; J. R. Robinett, Ardmore; I. M. Putnam, Berwyn.

Okla., Oklahoma City—Oklahoma Glove Mfg. Co., capital \$100,000, incorporated; J. G. Binkley, Medical Arts Bldg.

S. C., Pelham—Greer Eclipse Textile Device Co. installing several new machines and making other improvements at plant.

Tenn., Alcoa—McClintic-Marshall Co., Pittsburgh, Pa., reported, has contract for 5100 tons struc. steel for buildings of Aluminum Co. of America, Oliver Bldg., Pittsburgh, Pa. 10-3-29

Tenn., Chattanooga—Silver Suds Mfg. Co., 829 N. 19th St., Philadelphia, Pa., manufacturer of metal and wood cleaning preparations, establishing branch office, Pound Bldg., and plant to serve Tennessee, Georgia and Alabama; John A. Borden, Plant Manager, in city directing installation of machinery in plant, Lakeview. 12-26

Tenn., Chattanooga—Chattanooga Coca Cola Bottling Co., 214 Fort St., probably open bids Feb. 24 for \$100,000 bottling plant; 82x16 ft., brick, stone, plate glass front, about 720 windows, 5x9 ft., steel sash, 2-story, conc. yard surrounding; separate heating and power plant to be erected under ground; large garage to be erected at rear; William Crutchfield, Asso. Archt., First Natl. Bank Bldg. 10-10-29

Tenn., Chattanooga—Tennessee Paper Mills, North Chattanooga, expend \$50,000 for expansion in 1930.

Tenn., Murfreesboro—Smith & Fletcher's Cleanery, A. B. Smith, let contract to C. E. Hoffman, Murfreesboro, for \$30,000 cleaning plant; 1 story, brick, 4500 sq. ft. floor space; install equipment, including rug cleaning machine.

Tenn., Sweetwater—Farmers Tobacco Warehouse, Inc., capital \$50,000, chartered; G. C. Graves, T. B. Guthrie.

Tex., Dallas—Engineering—Smith & Whitney, Inc., capital \$150,000, P. H. Smith, 3519 Fairmount St.

Tex., Memphis—Southern States Cotton Machine Co., capital \$250,000, incorporated; W. E. Nelson, J. C. Downing, both Newlin, Tex.

Tenn., Nashville—C. W. Shortle, Middletown, O., establish \$75,000 bottling plant to be occupied by Dr. Pepper Bottling Co., J. D. Link, Pres., 401 Main St., Dallas, Tex.; Dr. Pepper Bottling Co., establish warehouse to distribute syrup to wholesalers; establish plants in principal cities and towns in this section.

Tenn., Nashville—National Life & Accident Insurance Co., C. A. Craig, Pres., increasing capital \$2,500,000 to \$3,000,000.

Tex., Galveston—Southern States Transportation Co. acquired franchise to operate Bolivar Ferry.

Tex., Houston—Mrs. Mellie Esperson Stewart let contract to J. B. Townsend, Post Dispatch Bldg., for \$80,000 box plant and office. Nella Esperson Industrial Dist., Navigation Blvd. near Greenwood; hollow tile, rein. conc., stone, 35,000 sq. ft. floor space; to be occupied by O. B. Andrews Box Mfg. Co., Chattanooga, Tenn., manufacturer of paper, fibre board, corrugated paper and package containers.

Va., Alexandria—Engineering and Contracting—H. W. Cord Co., Inc., chartered; H. W. Cord, Landover, Md.

Va., Harrisonburg—Engineering and Contracting—Standard Cast Stone Corp., capital \$25,000, incorporated; W. D. Sisler.

W. Va., Moundsville—United Zinc Smelting Corp., A. T. Newell, Moundsville, and Woolworth Bldg., New York, expend \$200,000 for improvements including 2 masonry Glover towers at acid plant, roaster bulidg and two 14-hearth Herreshoff roasters; buildings by Wheeling Structural Steel Co., Wheeling; roasters, Nichols Copper Co., 25 Broad St., New York; masonry towers, Chemical Appliances, Inc., 420 Lexington Ave., New York.

Motor Bus Lines and Terminals

Miss., Gulfport—C. B. Wilkerson, East Point, applied to Alabama Public Service Comsn., Montgomery, for permission to operate freight motor buses between Mobile, Ala., and Mississippi en route to Gulfport, via Theodore, Irvington, St. Elmo and Grand Bay.

Md., Baltimore—Ruxton Cab Co., Robert E. Padgett, 3014 Ferndale Ave., authorized by Public Service Comsn., to operate bus line, Falls Rd. and Mount Washington Bridge to Baltimore Ave. and Joppa Rd., Towson.

Okla., Ada—Southern Motor Coach Corp., capital \$20,000, incorporated; W. W. Walden, Ada; W. E. B. Leonard, Hugh.

Okla., Tulsa—United Taxicab Co., capital \$10,000, incorporated; William E. Hauser, 420 W. 11th St.

Tex., Wichita Falls—Southwest Coaches, Inc., capital \$40,000, chartered; S. H. Smith, 1613 Hays St.

Railways

Ala., Birmingham—See Miscellaneous Enterprises.

Ala., Mobile—Gulf, Mobile & Northern R. Co., H. E. Warren, Mgr. Purchases and Stores, inquiring for 2 gas-electric rail motor cars, 3 trailer cars and 1 observation car.

Ga., Moultrie—Georgia, Ashburn, Sylvester & Camilla Ry. Co., J. N. Pidecock, Pres. and Gen. Mgr., will purchase 2-8-2 type locomotive.

Ky., Louisville—Louisville & Nashville R. R. Co., A. T. Shanks, Pur. Agt., inquiring for 6 4-8-2 type locomotives. 12-19-29

Ky., Louisville—Louisville & Nashville R. R. Co., A. T. Shanks, Pur. Agt., reported, let contracts to Pullman Car & Mfg. Co., Birmingham, Ala., and Chicago, Ill.; Pressed Steel Car Co., Pittsburgh, Pa., and Mount Vernon Car Co., Mount Vernon, Ill., for 1800 freight cars of various types, involving \$4,000,000.

Texas—St. Louis Southwestern Ry. Co., W. S. Hanley, Ch. Engr., Tyler, applied to Interstate Commerce Comsn., Washington, for permission to build 17-mi. line, Van Junction to Van.

Tex., Grand Saline—Texas Shortline, subsidiary Texas & Pacific Ry. Co., E. F. Mitchell, Ch. Engr., Dallas, applied to Interstate Commerce Comsn., Washington, for permission to build 11-mi. line, Grand Saline to Van.

Tex., Houston—City set Mar. 22 as tentative date for voting on \$423,000 bonds for Municipal Belt Ry.

Tex., Quanah—Quanah, Acme & Pacific Ry. Co., C. H. Sommer, Pres., St. Louis, Mo.,

advises engineering forces now making permanent location, after which bids will be received and award made for immediate construction of 6½-mi. line, Quanah to Acme; standard construction, probably 90-lb. rail, creosoted ties, tie plates, embankments constructed to 20-ft. crowns, cuts 26 ft., with all waterways of permanent construction; conc. culverts in all openings, except Groesbeck Creek, to consist of 3 60-ft. girder spans, designed for Cooper E-60 loading, and will set on conc. piers; line to be ballasted with 10-ft. lift, gravel.

W. Va., Benwood, Wheeling—Baltimore & Ohio R. R., H. A. Lane, Ch. Engr., Baltimore, Md., let contracts to American Bridge Co., 71 Broadway, New York, and Bethlehem Steel Co., Bethlehem, Pa., for 6 turntables, 3 each, costing about \$15,000 each, being installed at Benwood, Fairmont, Grafton and Elmsgrove, W. Va., and Holloway and Loraine, Ohio; equipment and construction involving approx. \$360,000; construction work by company's Maintenance of Way Dept.

Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Ala., Birmingham—City Comsn. plans expending \$10,500 to widen 30 ft. and repave with sheet asphalt and brick South Twentieth St., Tenth Ave. to Five Points; A. J. Hawkins, City Engr.

Ala., Montgomery—City, W. A. Gunter, Mayor, receives bids in about 3 or 4 weeks to pave Martha St., Goldthwaite to Oak St.; J. M. Garrett, City Engr.

Ark., Rogers—City Council considering 23 blocks paving with curb and gutter improvements, in northern section of town, estimated cost \$74,500; W. L. Winters Engineering Co., Merchants Nat'l. Bank Bldg., Fort Smith, submitted estimates. 12-5

Ga., Atlanta—Fulton County Comms., W. R. Stewart, Chmn., started work on widening 10 ft., and paving with conc. Peachtree St., Fifth St. to Pershing Point; plan widening and paving Stewart Ave.; widening 20 ft. and paving Whitehall St.; paving Langston road, Mickleberry St.; paving gutters on Campbellton road; complete paving North Side Dr., Jett's Ferry road, old Jonesboro road; Clark Donaldson, Ch. of Construction. 1-9

Ga., Macon—Bibb County Comms. authorized paving approaches to Clinton Road Bridge; S. Robert Shi, County Engr.

Ga., Macon—City, G. Glen Toole, Mayor, plans expending \$200,000 for street paving. See Financial News Columns. 1-23

Ky., Benton—City, Bd. of Trustees, plans hard surfaced streets.

Louisiana—Louisiana Highway Comn., Baton Rouge, receives bids April 1 for 2 roads: Acadia and Lafayette Parishes—14 mi. conc., Route No. 2, Crowley-Duson Highway; Union Parish—6 mi. conc., Route No. 5, Bernice-Dubach Highway; H. B. Henderlite, State Highway Engr.

La., Delhi—Town, C. E. Wiggins, Mayor, receives bids March 4 to grade, maintain and gravel various streets.

La., Jennings—Louisiana Highway Comsn., Baton Rouge, E. Reddell, Supt. of Highway Maintenance Dept., Jennings, plans rebuilding 1 mi. gravel road north on Jennings-Elton Highway; H. B. Henderlite, State Highway Engr.

La., New Orleans—Louisiana Highway Comn., Baton Rouge, plans starting in few weeks, work on proposed road between New Orleans and Grand Isle; H. B. Henderlite, State Highway Engr.

La., Opelousas—St. Landry Parish Police Jury, J. J. Healey, Ck., plans graveling oil field from Port Barre.

Maryland—States Roads Comsn., Baltimore, receives bids Feb. 25 for 6 roads. Anne Arundel County—1.83 mi. gravel, Sear's Store-Bristol road, end of Cont. AA-62 to Bristol, Cont. AA-80; Baltimore County—1.99 mi. conc., Dover road, end of Cont. B-96 to Butler, Cont. B-130; Cecil County—3.2 mi. conc., or macad. with conc. shoulders, Pearce Neck road, end of Cont. Ce-59 to White Crystal Beach, Cont. Ce-74; Kent County—1.58 mi. conc., slag shoulders, Locust Grove—Black Station road; .88 mi. road, from Still

Pond road to Coleman, Cont. K-49; .79 mi. conc., slag shoulders, Rock Hall-Eastern Neck Island road, end of Cont. K-42 to bridge at The Narrows, Cont. K-50; St. Mary's County—1.06 mi. gravel, from Ridge toward Trap, and 1 mi. from end of Cont. SM-34, near Pearson toward Cedar Point; G. Clinton Uhl, Chmn.

Md., Annapolis—Ch. of Bureau of Yards and Docks, Navy Dept., Washington, receives bids Feb. 26 for 2000 sq. yd. bit. surfacing of roads and repairs to gutters at Naval Academy High Power Radio Station, Annapolis. 2-13

Md., Baltimore—Bd. of Estimates approved ordinance providing for widening Liberty St. to straight line with Cathedral St. and eliminating triangle at corner of Liberty and Saratoga Sts.; opening and widening Ensor St., Colvin to Madison, Forrest St., Front to Ensor, as part of Bath St. viaduct project; Nathan L. Smith, Highways Engr.

Md., Baltimore—City, Bd. of Awards, received low bid from Aiello Construction Co., Gough and Dean Sts., at \$31,599, to grade, curb and pave streets in Cont. No. 544; from P. Flanagan & Sons, B. & O. R. R. and Harford road, \$57,976, for streets in Cont. No. 545; Nathan L. Smith, Highways Engr.

Md., Baltimore—City, Highways Dept. making survey to resurface Caton Ave., Frederick road to Washington Blvd., Wilkens Ave., Caton Ave. to city boundary in Violetville; Frederick road from point beyond Irvington to city limits; Nathan L. Smith, Highways Engr.

Md., Centerville—State Roads Comsn., Baltimore, received low bid from Field, Barker & Underwood, Commercial Trust Bldg., Philadelphia, Pa., \$16,944, for .12 mi. conc. and macad. road, approach to proposed Ferry Pier on Kent Island, Queen Anne's County.

Miss., Biloxi—Harrison County Bd. of Supvrs., Eustis McManus, Clk., receives bids March 3 for 10,895 sq. yd. bit. pavement, 6424 lin. ft. gutter, 4 catch basins in West Howard Ave.

Miss., Forest—Scott County Bd. of Supvrs. receives bids March 4 for 8,203 mi. U. S. Route No. 80, between Forest and Lake; 105,604 cu. yd. excavation and borrow, 31,932 lb. rein. steel; 101,250 lb. rein. steel in bridges.

Miss., Gulfport—Harrison County Bd. of Supvrs., appointed H. A. Genung as Engr. to supervise paving of approach to Biloxi-Ocean Spring bridge, from Oak St.

Miss., Hazlehurst—City, Bd. of Aldermen, plan receiving bids in March for work on South Railroad Ave., East Hazlehurst.

Miss., Louisville—City, W. J. Newsom, Mayor, receives bids March 7 to grade, drain, gravel surface streets, install water and sewer connections, on College, Water and Pontotoc Sts.; A. A. McNeel, Clk.; F. A. Livingston, City Engr.

Miss., New Albany—Union County Comms. Road Dist. No. 2 receive bids Mar. 3 for 12,432 mi. grading, draining, graveling roads in Dist.; 164,402 cu. yd. excavation and borrow, 2820 lin. ft. 18 and 24 ft. culvert pipe, 61,498 lb. rein. steel in culverts; Roy F. Rudolph, Engr., New Albany.

Miss., Pittsboro—Calhoun County, Beat 5, plans surfacing 60 mi. roads in dist. See Financial News Columns.

Missouri—State Highway Dept., Jefferson City, received low bids for 46 roads and 16 bridges: Buchanan County—4,629 mi. 20-ft. conc., Route 1, Saxton-St. Joseph, C. H. Atkinson Paving Co., Watertown, S. D., \$71,645; Clinton County—2,976 mi. 20-ft. conc., Cameron-Excelsior Springs, H. C. Botsford, Kansas City, \$52,970; 3,785 mi. 20-ft. conc., Cameron-Excelsior Springs, bridge over Brushy Creek, H. C. Botsford, 650 W. 69th Terrace, Kansas City, \$104,333; 4,300 mi. 20-ft. conc., Cameron-Excelsior Springs road, bridge over Deer Creek, H. C. Botsford, \$123,643; 4,083 and 4,214 mi. 20-ft. conc., bridge over North and South Fork of Crooked River, over Barnesville and Moran Branches, H. C. Botsford; Adair County—1,646 mi. 18-ft. gravel, Route 6, Brashear-Knox County, bridge over Deer Branch, C. H. Atkinson Paving Co., \$18,199; Sullivan County—3,438 mi. 18-ft. gravel, Route 5, Milan-south, bridge at Sta. 844 plus 46, 2,927 mi. 18-ft. gravel, Route 5, Milan-north, 2,788 mi. Milan-north, Martin Wunderlich, St. Paul, Minn., \$102,439.

In Knox County—150 mi. 18-ft. gravel, Route 6, Adair County line, east, bridge over A. T. & S. F. R. R., Knutson Brothers, 3520 Main St., Kansas City, \$17,361; Lewis County—3,719, 3,688, 3,509 and 3,911 mi. 18-ft. gravel, Route 6, Knox County line-Monticello, bridges over Little Troublesome Creek, Middle Fabius and North Fabius, Martin Wunderlich Co., \$205,436; Marion County—culvert on Route 61, West Quincy, Cherus Construction Co., Minneapolis; Benton Coun-

ty—3,154, 2,590, 3,881, 3,887, 4,402, 4,450 mi. 20-ft. conc., Lincoln-Hickory County, M. E. Gillioz, Monett, \$441,724; Clay County—3,425 and 3,805 mi. 20-ft. conc., Cameron-Excelsior Springs, bridge over creek, H. C. Botsford, \$217,638; Jackson County—bridge over Round Grove Creek, east of Leeds, O'Connor Bros., 309 Hall Bldg., Kansas City, \$13,598; Moniteau County—2,164 and 3,270 mi. 18-ft. gravel, California, north, bridge over Moniteau Creek, Joseph H. Stephens, Mansfield, \$101,650.

In St. Charles County—.201 mi. 18-ft. gravel, south of Old Monroe, bridge over Cuivre River, C. P. O'Reilly, 222 W. "B" St., St. Louis, \$98,292; Barton County—.284 mi. 20-ft. conc., near Lamar, bridge over St. L. & S. F. R. R., Graham Bros., Leeds, \$35,312; Jasper County—2,770, 4,764, 513 mi. 20-ft. conc., Joplin-Sarcoxie, Koss Construction Co., Des Moines, \$151,381; Lawrence County—1,181 mi. 18-ft. cherts, Marionville-Stone County, C. I. Williams, Monett, \$12,727; Dallas County—3,996, 899, 5, 4,857 2,292 and 2,869 mi. 20-ft. conc., Louisville-Greene County, Hoeftken Bros., Belleville, Ill.; Greene County—3,678, 4,242 and 4,830 mi. 20-ft. conc., Springfield-north, Hoeftken Bros., \$160,714; Pulaski County—4,890 mi. 18-ft. gravel, Bloodland, south, Neyer Construction Co., Billings, \$32,203; Carter County—.890 mi. 18-ft. gravel, Van Buren, east, bridge over Jones Hollow, Kelly & Underwood, Granby, \$14,660; Ozark County—2,275 and 2,902 mi. 16-ft. gravel, Gainesville-south, Carte-Harlin Construction Co., West Plains; Texas County—3,282 mi. 18-ft. gravel, Pulaski County, south, Neyer Construction Co., \$35,908; T. H. Cutler, Ch. Engr. 1-23

Missouri—State Highway Dept., Jefferson City, receives bids Feb. 28 for 26 roads and 31 bridges: Clinton County—.049 mi. bridge over Shoal Creek, Cameron-Excelsior Springs road, 240,000 lb. struct. steel; Nodaway County—2,443 mi. 18-ft. gravel, Barnard Spur, 34,003 cu. yd. excavation, 72,420 lb. struct. steel; bridges over 102 River, I-beams; Linn County—1,326 mi. 30-ft. graded earth, Browning-Purdin, 27,997 cu. yd. excavation, bridges over Branch of Locust Creek; Putnam County—.780 mi. 18-ft. gravel, Livonia east and west, 20,747 cu. yd. excavation, Maries County—3,828, 3,949 and 3,620 mi. 20-ft. conc., Osage County line-Vienna, 154,060 cu. yd. excavation, 130,040 sq. yd. paving; Moniteau County—3,308 and 3,270 mi. 16-ft. gravel, California north, 109,276 cu. yd. excavation, bridge over Moniteau Creek, deck girders and truss, 6164 cu. yd. paving; Miller County—1,911 mi. 18-ft. gravel through Eldon, 27,841 cu. yd. excavation.

In Montgomery County—3,66 mi. 16-ft. gravel, Big Springs-McKittrick, 156,789 cu. yd. excavation, 63,910 lb. struct. steel, bridge over Mill, School and Bear Creeks, deck girders and truss over School House Branch; Perry County—2,722 mi. 18-ft. gravel, Perryville, south, 63,210 cu. yd. excavation, 66,280 lb. struct. steel; Barton County—2,884 mi. 18-ft. gravel, Lamar, east, 30,193 cu. yd. excavation; Jasper County—bridge over Turkey Creek, on 104 mi. Joplin-Duenweg road; McDonald County—4,969 and 4,996 mi. 18-ft. gravel, Noel-Southwest City, 138,802 cu. yd. excavation, 12,414 cu. yd. paving, bridges over Honey Creek, Side Ditch, Dry Branch, and Yardell Branch, slabs, deck girders, etc.; St. Clair County—4,607, 4,626 and 4,772 mi. 18-ft. gravel or chat, Eldorado Springs-Osceola, 165,931 cu. yd. excavation, bridges over Little, Simms and Coon Creeks and over Dry and Green Branches; deck girders, slabs, etc., 17,462 cu. yd. paving.

In Christian County—385 mi. 18-ft. gravel, Stone County line-Route 65, 3,278 cu. yd. excavation; Stone County—3,220 and 3,885 mi. 18-ft. gravel, Galena-Christian County line, 113,917 cu. yd. excavation, 6737 cu. yd. paving, bridges over Spring Branch and over Branch of Gulf Creek; Carter County—1,506 mi. 16-ft. gravel, Grandin-Ripley County; Dent County—4,430 mi. 18-ft. gravel, Salem-Sligo, 5580 cu. yd. paving; New Madrid County—430 mi. 18-ft. conc., New Madrid Spur, 1073 cu. yd. excavation, 4598 cu. yd. paving; Douglas County—4,854 mi. 24-ft. graded earth, Ava East, 103,070 cu. yd. excavation, bridges over Bryant Creek and Crane Hollow, 4598 sq. yd. paving; Scott County—4,439 and 4,363 mi. 20-ft. conc., Benton, north, 248,606 cu. yd. excavation, 102,356 sq. yd. paving, bridges over Little Ramsey Creek, Caney Creek, etc.; T. H. Cutler, Ch. Engr.

Mo., Fredericktown—City, W. A. Engel, Mayor, contemplates paving, curbing, and gutter on various streets.

Mo., Mexico—City, J. H. Lane, Mayor, plans repaving with conc. 19 blocks on various streets, including Jackson, Robinson.

Mo., Pineville—McDonald County plans expending \$12,000 for right of way in White Rock Special Road Dist., on Highway No. 88, from White Rock to Arkansas State line; State Highway Dept., Jefferson City, will build road; George L. Clark, Div. Highway Engr. See Financial News Columns.

Mo., Sedalia—City Council considering paving Ohio or Asage St. from business dist. to Highway No. 65.

Mo., St. Joseph—Buchanan County Comms. plan expending \$500,000 for paving from Rushville to Gower.

Mo., St. Louis—City, Bd. of Public Service, E. R. Kinsey, Pres., receives bids Feb. 25 to improve and rebuild 12 streets, avenues, etc., including Alma, Hummel, Milentz, Bentz Ave.; Graham St.; W. W. Horner, Engr.

Mo., St. Louis—City, Bd. of Public Service, received low bids to pave 6 streets and avenues: January Ave., Webb-Boone Paving Co., 5103 Fyler St., \$18,815, asphalt; Walsh St., Brannon to Macklind, asphalt, Trinidad Asphalt Manufacturing Co., 600 S. Teresa St., \$19,788; from Macklind to January, asphalt, Central Paving & Construction Co., 6161 Maple St., \$21,485; Alexander St., C. A. Moreno Co., Syndicate Trust Bldg., \$9917, asphaltic conc.; Dolman St., Crean & Scott Construction Co., 1242 Sublette St., \$11,718, asphaltic conc. 1-30

N. C., Charlotte—City, R. W. Rigsby, Mgr., considering plans to improve North Tyron St. beyond S. A. L. R. R.; plans 60-ft. street to proposed underpass.

N. C., Ellenboro—Town Bd. plans expending \$8000 to pave streets; work to begin in Spring.

N. C., Winston-Salem—Forsyth County plans 2 1/4 mi. grade and soil Ogburn Ave., connecting Glenn Ave. south of Mineral Springs schoolhouse to old Rural Hall road.

Oklahoma—State Highway Comsn., Oklahoma City, receives bids March 11 for 13 roads: Hughes County—5 mi. U. S. Highway No. 75, south from Wetumka; Payne County—10 mi. State Highway No. 1, west of Yale; Osage and Washington Counties—5.5 mi. State Highway No. 11, in Avant Bottom; Canadian County—5.45 mi. U. S. Highway No. 81, south of Okarche; Murray County—9.83 mi. U. S. Highway No. 77, south of Davis; Carter County—11 mi. U. S. Highway No. 77, north of Ardmore; Beckham County—4.88 mi. U. S. Highway No. 66, east from Erick; Oklahoma County—4.82 mi. U. S. Highway No. 66, east of Luther; Grady County—10 mi. 10-ft. slab on present 10-ft. width, U. S. Highway No. 81; Pawnee County—5 mi. U. S. Highway No. 64, near Camp; Alfalfa County—6 mi. U. S. Highway No. 64, at Jet; Noble County—12 mi. U. S. Highway No. 64, east of Perry; Washington County—4 mi. State Highway No. 25, east of Bartlesville; A. R. Losh, State Highway Engr.

Okl., Oklahoma City—Oklahoma County Comms. receive bids Feb. 24 to gravel 4 mi. Fifty-sixth St., from Norman Road, east.

Okl., Oklahoma City—Oklahoma County Comms. considering paving 2 roads: 1.4 mi. U. S. Highway No. 266, east of Harrah; 4.82 mi. U. S. Highway No. 66, east of Luther.

Okl., Vinita—Craig County considering paving Highways No. 66 and 73 from Vinita to point 3 mi. west; plans widening Highway No. 25 to 30 ft.

Tenn., Chattanooga—City, E. D. Bass, Mayor, plans extending Broad St. to connect with St. Elmo Ave.; opening Riverview road, Frazier Ave. to Barton Ave.; W. H. Wilson, City Engr.

Tenn., Chattanooga—City, E. D. Bass, Mayor, considering widening Rossville Ave. from Main St. to Rossville Blvd. intersection.

Tex., Beaumont—Jefferson County, B. B. Johnson, County Judge, considering about 8 roads; J. B. Converse, Engr., submitted estimates. See Financial News Columns.

Tex., Beaumont—City Comn., J. W. Anderson, City Mgr., considering two-way opening of Orleans St. to Pearl and to Willow; extending McFaddin St., Magnolia Ave. to Main St.; R. C. Black, City Engr.

Tex., Brady—McCulloch County considering hard surfacing Highways No. 9, 29 and 10, totaling about 100 mi.; cost about \$1,250,000. See Financial News Columns.

Tex., Brownsville—Cameron County, Oscar C. Dancy, County Judge, considering organizing Brownsville Road Dist. for building road to Boca Chica, cost about \$500,000.

Tex., Houston—City, W. E. Monteith, Mayor, receives bids soon to pave West Gray Ave., 45 ft. wide, with conc., asphaltic topping, from point west of Waugh Drive to Shepherd Drive; H. L. Shaw, City Engr.

Tex., Houston—City, W. E. Monteith, Mayor, considering expending \$1,000,000 for paving, \$400,000 for bridges and subways; \$200,000 macad. streets; Harris County, Norman Atkins, County Judge, plans expending \$880,000, state highways, 280,000 underpass, county's share; \$2,662,000, county highways and bridges. See Financial News Columns.

Tex., Houston—City, W. E. Monteith, Mayor, received low bids from Gulf Bitu-

lithic Co., 2820 Polk St., Houston, \$10,609, to pave 8 street crossings at "Sap" tracks through South End, including McGowen, Imeda, Cleburne, etc.; H. L. Shaw, City Engr.

Tex., Huntsville—City Council plans letting contract soon for one block paving, Eighteenth St.

Tex., Fort Worth—City, O. E. Carr, Mgr., plans paving Bryan St. and Riverside Dr. to Belt St.; D. L. Lewis, City Engr.

Tex., Galveston—Galveston County Comrs., H. B. Holman, County Judge, plan expending \$163,000 for road building, including Bolivar Peninsula highway; C. C. Washington, County Engr.

Tex., Lagrange—Fayette County, Road Dist. No. 2 may expend \$110,000 as county's share for Highway No. 44, from Lee County line to Lagrange; also highway to Halstead, to connect with Ellinger-Colorado County line highway. See Financial News Columns.

Tex., Marfa—Presidio County considering expending \$600,000 for roads. See Financial News Columns. 11-14-1929

Tex., San Antonio—City, Fred Fries, Clk., receives bids Feb. 25 to improve marac and Fairplay St.; I. Ewig, City Engr.

Tex., San Saba—City considering expending \$75,000 for street paving. See Financial News Columns.

Virginia—State Highway Comsn., Richmond, received low bids for 4 roads and 2 bridges: Culpeper County—4.5 mi. macad., Route 21, from point east of Culpeper to Rappahannock County line, Spotsylvania Construction Co., Highland Springs, \$129,004; Botetourt County—7.5 mi. macad., Route 17, Spottswood Trail, Rosenbaum Brothers, Inc., Tazewell, \$138,191; Pittsylvania County—2 mi. Route 14, Fall Creek to point south of Banister River, Haynes Construction Co., Chatham, \$118,083, bit. macad.; Clarke County—4.3 mi. macad., Route 54, Round Hill to Loudoun County line, Poffinberger & Mause, Myersville, Md., \$99,360; Lunenburg County—269-ft. rein. conc. bridge over North Meherrin River, Route 44, Fredericksburg Bridge Co., Fredericksburg, \$21,882; Norfolk County—repair fender for Elizabeth River State Highway Bridge, Route 504, Norfolk, W. L. Jones Contracting Co., Elizabeth City, N. C., \$8,322; C. S. Mullen, Ch. Engr. 1-30

Va., Danville—City plans expending in spring \$78,690 to improve 11 streets.

Va., Petersburg—City Council plans paving Johnson road, repairing Campbell's Bridge, improving streets, including curb and gutter; will sell bonds. 10-31-1929

Va., Richmond—City, J. Fulmer Bright, Mayor, considering expending \$500,000 for smooth paving, including \$100,000 for West Broad St. and \$50,000 for West Main St., Cherry St. westward. See Financial News Columns.

West Virginia—State Road Comsn., Charleston, receives bids March 18 for 17 roads and 5 bridges, costing about \$2,500,000. McDowell County—9 mi. conc., Welch to Mayberry; Kanawha County—10 mi. conc., Clendenin toward Clay; Barbour County—8.7 mi. State Route 46, Bellington to Junior; Harrison County—1 mi. U. S. Highway No. 19 in connection with Perry mine underground; grade and drain; Braxton County—8 mi. U. S. Highway, No. 19, Flatwood to Bulltown; Lincoln County—7 mi. State Route 63, Yawkey to Woodville; Monongalia County—389 mi. State Route 7, Blacksville, to Bula; Pendleton County—8 mi. State Route 5, between Mouth of Seneca and Radolph line; Raleigh County—6 mi. U. S. Route 19-21, Fayette County line to Skelton; 3.56 mi. U. S. Route 19-21, Skelton to Beckley; Ritchie County—7.7 mi. State Route 11, Macfarlan to Ciseo; Tucker County—8.8 mi. State Route 40, Davis to Canaan Valley; retreat work includes: Fayette County—5.2 mi. U. S. Highway No. 19-21, Beckwith to Fayetteville; Raleigh County—4.6 mi. U. S. 19-21, Shady Springs to Ghent; Pocahontas County—4.7 mi., grade, drain, gravel surface, State Route 84, Frost to Virginia State line; Bridges: Greenbrier County—over Big Clear Creek and over Little Clear Creek, U. S. Highway No. 60; Corde Bridge on Roane-Calhoun County line, State Route 5; Monongalia County—bridge over Roberts Run, State Route 7; Blacksville Bridge, State Route 7.

W. Va., Philippi—Barbour County Court appropriated \$8,000 toward grading, draining Route 57, Philippi Dist.

Contracts Awarded

Ark., Little Rock—City Comms., Street Improvement Dist. No. 513, F. B. T. Hollenberg, Chmn., reported, let contract to Connelly Paving Co., Home Insurance Bldg., \$27,

397, to grade, drain, curb, gutter and pave with asphalt 6280 sq. yd. on Scott St.

Ark., Springdale—Comms. Paving Dist. No. 10, C. A. Owenby, Chmn., let contract to McEachin & Luke, Home Insurance Bldg., Little Rock, \$33,014, for paving, etc., in dist.

Louisiana—Louisiana Highway Comsn., Baton Rouge, let contract for road and bridge, subject to approval of Liquidation Bd.; Red River Parish—6.4 mi. 18-ft. conc. pavement, Coushatta-Lockwood Highway, Forcus-James Co., Dyerburg, Tenn., \$155,526; East Baton Rouge and Ascension Parishes—Bayou Manchac Bridge, Baton Rouge-New Orleans, Airline Highway, W. H. Groom & Son, Fayette, Miss., \$67,113; H. B. Henderlite, State Highway Engr. 1-2

La., Baton Rouge—City Comsn. Council let contract to Southern Bond Co., Cangelosi Bldg., New Orleans, to pave with Warrenite bitulithic North Fourteenth St. at \$9756 and Boyd St. at \$7850. 2-6

La., Cameron—Louisiana Highway Comsn., Baton Rouge, will start, at once, to complete 26 mi. highway connecting Lake Charles, Calcasieu Parish and Cameron, Cameron Parish, on Sulphur-Cameron Highway; W. T. Burton, Sulphur, having purchased contract from R. J. Terrebonne, Morgan City; H. B. Hepderlite, State Highway Engr. 8-15

La., Columbia—Caldwell Parish Police Jury, R. R. Redditt, Sec.-Treas., let contract to J. J. & J. W. McKeithen, Grayson, at \$39,258, for 3 roads in Dist. No. 2; 3½ mi. Clarks-Bethel road; 1¼ mi. Grayson-Vixen road; 2 mi. Copenhagen road. 1-23

La., Homer—City let contract to Nattin & Murtishaw, Homer, \$9,100, to pave curb and gutter South and East Third St.; Charles D. Evans, Const. Engr., Shreveport. 2-6

Miss., Hazlehurst—City, Mayor and Bd. of Aldermen let contract to Cobb Brothers Construction Co., Box 92, at about \$45,000 for 20-ft. conc. paving on Jackson St. and curb, gutter 5-in. conc. base, 2-in. asphalt top on Georgetown and Lowe St.

Miss., Hazlehurst—Copiah County Bd. of Supvrs. let contract to B. A. Lusk & Co. for 3 1/5 mi. gravel, Liberty road, Dist. No. 3.

Tex., Beaumont—City, J. W. Anderson, Mgr., let contract to W. F. Warfield & Co., 1615 Victoria St., Beaumont, for 5-in. conc. base, 1-in. Duraco topping, 30-ft. wide, in Milam St.; R. C. Black, City Engr. 2-6

Tex., Huntsville—City Council let contract to Butler Brothers, Huntsville, for 9 blocks paving on 4 streets.

Tex., San Antonio—Bexar County, Perry S. Robertson, County Judge let contract to Colglazier & Hoff, 125 Crosby St., at \$10.90 per ton, for natural limestone rock asphalt topping, on 1872 ft. Weber road extension, about 140 tons; W. S. Kendall, County Auditor. 2-6

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.

Ala., Birmingham—See Roads, Streets, Paving.

Ala., Birmingham—City voted \$3,000,000 bonds to provide elimination of flood menace of Village and Valley Creeks through widening and deepening 2 streams from point near East Lake.

Ark., Hot Springs—L. L. McEachin Construction Co., Home Ins. Bldg., Little Rock, reported, has contract at \$103,762 for sewers and water works, South Hot Springs and Oaklawn Sewer & Water Imp. Dist.; construction soon; type of pipe not decided. 1-9

Ark., Leachville—See Water Works.

Ark., Lewisville—City receives bids Feb. 28 for sewer and water works. See Want Section—Bids Asked.

Fla., Pensacola—Bureau of Yards & Docks, Washington, D. C., reported, received low bid at \$31,974 from L. M. Harvey, 20 E. Garden St., for improvements to sewerage system.

Ga., Atlanta—Robert & Co., Bona Allen Bldg., Atlanta, reported associate engineers

with Whitman, Requardt & Smith, Baltimore Trust Bldg., Baltimore, Md., for sewer survey. 1-16

Ky., Louisville—Comms. of Sewerage, 400 M. E. Taylor Bldg., receives bids Feb. 27 for Western Parkway sewer. See Want Section—Bids Asked.

La., New Orleans—Sewerage and Water Bd., reported, approved plans and will soon call for bids for installing sewers in Lakeview, Gentilly Terrace, and Edgewood sections and for lined canal in New Orleans Relief canal between Broad St. and Jefferson Davis Parkway; cost \$750,000; Bd. accepted bid of Maloney Electric Co., St. Louis, Mo., at \$11,180 for contract 111-D, 3000 kw. transformer for power house No. 2.

Miss., Laurel—City, Paul Klyce, City Engr., completed first extension of sewer system; soon call for bids on 2 mile extension to serve Boulevard and South Magnolia sections, Queensboro, Wausan and Justice subdivision.

Miss., Louisville—See Roads, Streets, Paving.

Mo., St. Louis—Grant & Meinert, Fullerton Bldg., reported, have contract for complete sewer system at Lake Forest; cost \$30,000.

Mo., St. Louis—Bd. of Public Service receives bids March 4 for constructing Biddle St. Public Relief sewer. See Want Section—Bids Asked.

N. C., Greensboro—Tucker & Laxton, Independence Bldg., Charlotte, reported, low bidder at \$200,000 for sewerage disposal plant. 2-6

N. C., Greensboro—R. G. Lassiter, American Bank Bldg., Greensboro, reported, low bidder at \$36,394 for laying combination of vit. and conc. pipe for sewage disposal plant S. Buffalo Creek. 2-6

N. C., Greenville—City has \$20,000 appropriation for sewer extension.

N. C., Raleigh—North Carolina State Hospital for Insane receives bids Feb. 28 for 1½ 8-in. terra cotta sanitary sewer. See Want Section—Bids Asked.

Okla., Purcell—Robeck & Humphrey, Omaha, Neb., reported, have contract for water works, sewers and electric system; V. V. Long & Co., Engrs., Colcord Bldg., Oklahoma City. 2-13

S. C., Greenville—City, L. B. Clardy, Chmn. Sewer Committee, reported, let contract in May for \$75,000 sewers.

S. C., Ninety Six—Town install complete sewer and water system. See Water Works.

Tenn., Brainerd, Branch Chattanooga—City, Roger Crox, Commr., plans sewer disposal plant for Brainerd; George B. Gascoigne, Const. Engr., 1140 Leader Bldg., Cleveland, O., will assist in designing plant; W. H. Wilson, City Engr.

Tex., Brownwood—City, O. W. McDonald, Mayor, receives bids Feb. 24 for material, equipment and labor for sewage disposal plant. See Want Section—Bids Asked.

Tex., Houston—C. K. Horton, 2202 Clay St., reported, low bidder for storm and sanitary sewers along Dart and Hickory Sts.

Va., Bedford—Town, reported, plans sewerage improvements south side of town.

Va., Hopewell—City, reported, will acquire sewer systems of City Point Service Co. and Old Dominion Water Works Co.

Va., Petersburg—City plans \$12,700 sewer improvements.

Telephone Systems

D. C., Washington—Chesapeake and Potomac Telephone Co., Homer Bldg., expend approx. \$3,634,000 in 1930 for additions and betterments, with net additions of \$532,000; additions to outside plant, \$908,000; additions and betterments to central office equipment, \$470,000; installing telephone and private branch exchange switchboards on subscribers' premises, \$1,834,000; building additions, \$160,000; miscellaneous, \$202,000; expend approx. \$22,100,000 with net additions of \$10,369,000 in next 5 years.

Mo., St. Louis—Southwestern Bell Telephone Co., W. C. Housam, Div. Supt., started preliminary work on first unit of \$1,000,000, 12-story telephone building, Olive and Beaumont St.; initial unit 3 story, 100x134 ft., contain terminal equipment for \$50,000,000 underground cable system under construction, including St. Louis-Kansas City cable and subway to be laid east to Terre Haute, Ind.; foundation for additional floors; ultimately, 143x225 ft.; plans just out for bids; contract will not be let for about 3 weeks; I. R. Timlin, Archt., Telephone Bldg. 11-7

Okla., Oklahoma City—Municipal Telephone & Utilities Co., reported, acquired holdings of Associated Utilities Co., operators of ice,

electric, gas, water and telephone properties in 17 county seat towns in Oklahoma, Arkansas and Montana, involving \$3,230,604.

Tex., Hearne—Southwestern Bell Telephone Co., B. D. Hull, Engr., Dallas, plans improving system and building costing \$20,000; install battery or flashlight system.

Textile Mills

Ala., Florence—Stockholders of Florence Industrial Corp., reported, authorized expenditures of \$35,000 for addition to warehouse and main building for Gardiner-Warring knitting mill, East Florence; Gardiner-Warring Co. will install additional machinery. 1-30

N. C., Asheville—Theodore Y. Rodgers, Philadelphia, Pa., and associates, reported, plan installing additional full-fashioned hosiery machines in recently acquired Asheville Hosiery Co.'s plant; present output 1000 doz. pair full-fashioned silk hosiery.

N. C., Asheboro—Pilot Hosiery Mills, Lexington, reported, secured portion of Ross Bldg. establish hosiery plant; install 100 machines; Arthur Ross, Propr. of building will erect dye room and boiler plant for mill; manufactures artificial silk men's hose.

N. C., Burlington—Novelty Mfg. Co., 215 Fourth Ave., New York, reported, leased space at Mayfair Mills Bldg., install equipment; manufacture bed spreads, draperies, etc.

N. C., Hickory—Lyery Fullfashion Mill, Inc., capital \$500,000, incorporated; R. Lyery, R. L. Bothwell.

N. C., Rockingham—Hannah Pickett Mill, reported, completed excavation and will begin construction 50x150 ft. addition to Hannah Pickett Mill, No. 2; 1 story and basement; basement for storage, main floor for finishing machinery; install 100 looms and additional spindles; Price-Smith, Contrs., in charge of building operations, under supervision J. W. Jenkins, Pur. Agt., Manufacturers Bldg.

N. C., Shelby—Carpenter-Colquitt Hosiery Mills, Inc., capital \$50,000, chartered; R. E. Carpenter, C. R. Colquitt.

N. C., Taylorsville—W. L. Nichols, Selwyn Ave., Charlotte, reported, acquired Liledoun Mfg. Co., Taylorsville Mfg. Co. and Miller Mfg. Co.

S. C., Greenville—Union Bleachery advises are putting in new power plant; purchased 1500 kw. traction type turbine from Allis-Chalmers Mfg. Co., Milwaukee, Wis.; will necessitate revamping all steam piping and electrical wiring; contract for steam piping and heating will be let in few days; will rearrange present machinery; install certain quantities of dyeing equipment for enlargement dyeing capacity; building just about being completed was handled by Potter & Shackelford, Allen Bldg., Greenville; sprinkler work now being installed by C. M. Guest & Son, Sharpe St., Anderson; electrical wiring handled by Huntington & Guerry, River St., Greenville. 9-26

Tenn., Bristol—Manny-Rielly Co., W. A. Harder, Pres., has removed ladies' rayon underwear plant from Valatie, N. Y., to 3-story building on Fourth St.; offices and salesrooms of company 230 Fifth Ave., N. Y. 2-13

Tenn., Murfreesboro—Stone River Woolen Mills, capital \$100,000, incorporated; James R. Jetton, J. C. Beesley.

W. Va., Princeton—Princeton Hosiery Mills Co., L. G. Bowling, Pres., announced that production will be greatly increased by addition of new machinery and rearrangement of plant operations.

W. Va., Princeton—Princeton Chamber of Commerce, D. L. Casey, Sec.-Mgr., advises in regard to location of \$500,000 plant in city by Consolidated Rayon Corp., 23 W. 23rd St., New York City, plant has not yet been located; negotiations are under way for small unit of this plant in connection with one of local industries, which would not necessitate construction of new building; this has not been definitely arranged. 9-26

Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification.

Ark., Fayetteville—City, install \$35,000 pumping unit for water pumping plant on White River; pump with capacity of 1500

gal. per minute driven by 300 h. p. Diesel engine.

Ark., Leachville—City, reported, plans water works, distribution system, mains and sanitary sewers; cost \$75,000; Cecil Shane, Atty., Blytheville. 12-19

Ark., Lewisville—City, receives bids Feb. 28 for material, labor and constructing water works and sewer system. See Want Section—Bids Asked.

Ark., Mena—City & Water Works Impr. Dist. votes March 12 on \$40,000 bonds; improve plant, extend mains, etc.

Ark., Norvell—Water Main Impr. Dist. No. 1, reported, plans water mains, Cartwright St., Ruth St., Earle St., Smith St., etc. 10-31

Ky., Benton—Bd. of Trustees contracted with Merkle Construction Co., City Bank Bldg., Kansas City, Mo., for water works and sewerage disposal system; work to be completed in spring; cost \$65,000.

La., Shreveport—City Council approved plans for supplemental water works plants on Cross Lake; bids will be received March 27 for construction of plants or units and for extension of water mains to various sections of city; The J. N. Chester Engineers, Clarks Bldg., Pittsburgh, Pa. 1-30

Md., Cumberland—Tri-State Engineering Co., Liberty Trust Bldg., reported, low bidder at \$115,213 for installing 20-in. c. i. water main from Ridgedale reservoir to Amelle; Ralph L. Rizer, City Engr.

Miss., Ellisville—W. C. Trotter, Sec., Mississippi Bldg. Coman., New State Capitol Bldg., Jackson, receives bids March 6 for water mains at farm group at Mississippi School and Colony for Feeble-minded. See Want Section—Bids Asked.

Miss., Louisville—See Roads, Streets, Paving.

Mo., Bismarck—Joseph Oneil, 119 Fourth Ave., Leavenworth, Kansas, has contract at \$40,000 for water works system, work to begin about March 15; will include Class B pipe, valves, fire hydrants, deep well supply, brick pumping station, 20,000 gal. capacity reservoir, elevated steel tank and tower, 75,000 gal. capacity, 125 ft. high; install 150 g.p.m. deep well pump, 250 gal. centrifugal pump, motor driven, and 250 g.p.m. centrifugal pump, gasoline driven; Russell & Axon, Engrs., 6200 Easton Ave., St. Louis; machinery contractors, Layne-Western Co., Mutual Bldg., Kansas City, for Layne deep well pump; Reeves & Skinner Mch. Co., 2211 Olive St., St. Louis, for Dayton-Dowd centrifugal pumps. 1-23

Okla., Chickasha—City, reported, defeated \$420,000 bond issue for improvements water works system. 12-26

Okla., Marlowe—City, reported, having plans prepared by V. V. Long & Co., Colcord Bldg., Oklahoma City, for \$60,000 water works improvements.

Okla., Purcell—See Sewer Construction.

S. C., Ninety Six—Town, W. B. Jetter, Clk., will install complete water and sewerage system; filtration plant of 500,000 gal. capacity with necessary machinery and storage reservoir; bonds will be sold Feb. 27; bids for installation to be invited later; Ryan Engineering Co., Engrs., Arcade Bldg., Columbia. 2-13

Tex., Dallas—City Commrs., reported, lay 9 miles of additional water mains, S. Dallas; day labor with city forces; cost \$40,000.

Tex., Dallas—J. B. McCrary Co., Praetorian Bldg., Dallas, will begin work soon on construction water works distribution lines; amount of contract \$300,000. 12-19

Tex., Houston—City will vote about March 22 on \$1,000,000 water bonds; \$1,000,000 sanitary sewerage; \$750,000 storm sewer; \$200,000 park bonds; James H. B. House, Water Commr. 2-6

Tex., Houston—See Water Works.

Tex., Levelland—City let contract to Joe B. Winslett, Merchants Bank Bldg., Dallas, and Irick Construction Co., Plainview, at \$55,306 for extension water and sewer system; work to begin March 15; Smith & Whitney, 2017 Cedar Springs Ave., Dallas, have contract for Bryan-Jackson pump; Montgomery & Ward, Engrs., Harvey-Snyder Bldg., Wichita Falls; \$67,000 bonds available. 2-13

Tex., Troup—See Sewer Construction.

Va., Purcellville—Town, reported, let contract to J. B. McCrary Co., Citizens and Southern Bk. Bldg., Atlanta, Ga., for water system.

W. Va., Bluefield—City, Elmer C. Barton, City Mgr., has option on 7500 acre tract

Cove Creek and Cox Branch water shed for water supply.

Woodworking Plants

Fla., Perry—Perry Stove Co., incorporated; M. R. Stickland, F. S. Crabtree.

Ky., Hopkinsville—Wadsworth-Campbell Box Co. merged with Autokraft Box Corp., Lima, Ohio.

Mo., St. Louis—Acme Upholstered Furniture Co., 816-18 N. Seventh St., capital \$12,000, incorporated; Erwin Hoth.

FIRE DAMAGE

Ala., Tuscaloosa—Warrior River Lumber Co.'s plant, including lumber sheds, office and dry kilns; loss \$80,000.

Ark., Appleton—T. A. Hulis' store; Post-office; Christian Church; loss \$20,000.

Fla., Belle Glade—L. C. Betzner's building, Howell Ten-Cent Store; Freidheim Seed Store; loss \$40,000.

Ga., Athens—G. A. Crane's 2 stores on Broad St.; loss \$12,000.

Ky., Brownsville—Gibraltar Coal Mining Co.'s power house; loss \$50,000.

Ky., Greensburg—Warehouse of Green County Loose Leaf Warehouse Co., J. F. Pendleton, Mgr.; loss \$30,000.

Md., Annapolis—Annapolis High School damaged; \$25,000.

Md., Annapolis—Barn and other buildings at Hillsmere, summer estate of Martin H. Smith, of New York, near South river about 3 mi. from Annapolis; loss \$50,000; H. F. Myers, Mgr. of estate.

Md., Baltimore—William C. Dorsey & Sons Co.'s mill, storage building and lumber, E. Fayette St. and Highland Ave.

Md., Baltimore—Mercantile Savings Bank Bldg., Fayette St. and Park Ave.; loss \$25,000 to \$50,000.

Md., Dundalk, Baltimore—Summer cottages on North Point Creek owned by Geo. Konig, 2733 Eastern Ave., Chas. Ogle, Munsey Bldg., and Caspar Reuter, 607 Oldham St., all Baltimore; loss \$18,000.

Miss., Clarksdale—Five dormitories at Negro Agricultural School on Friar Point Road, 4 mi. from Clarksdale; loss \$30,000.

Miss., Holly Springs—Carnegie Building at Mississippi Industrial College for Negroes damaged; loss \$20,000.

Miss., Lucedale—Smith Chevrolet Co.'s building; Gem Cafe; Post Office; Laidrug store; Masonic lodge rooms; loss \$25,000.

N. C., Elizabeth City—McCabe & Grice Department Store; loss \$35,000.

N. C., Newton—Newton High School; loss \$100,000.

N. C., Statesville—Plant of Ritca Hosiery Mills.

S. C., Ellmore—Gin house and machinery of F. A. Fair; loss \$10,000.

S. C. Travellers Rest—State High School; loss \$25,000; E. C. Shockley, Supt. of School District.

Tenn., Birchwood—High school and elementary school; loss \$16,000; J. E. Walker, Supt., Hamilton County Bd. of Education, Chattanooga.

Tenn., Clarksville—Minor A. Randle's residence, Russellville Turnpike; loss \$8000 to \$10,000.

Tenn., Lewisburg—Mrs. Fannie Fergus' dwelling occupied by Clarence Duncan.

Tenn., Nashville—Residences of Fate Conatza, D. W. Bordin and A. M. Gosday, all 6200 block New York Ave.; loss \$15,000.

Va., Norfolk—Drake & Smith Shoe Co.'s store, 450 E. Main St.; Vogue Sample Shop, 452 E. Main St.; loss \$15,000.

Va., South Boston—Boston Mfg. Co.'s building, formerly owned by Virginia Wagon Co.; loss \$25,000.

Va., Surry—Paul Cox's garage; loss \$12,000.

W. Va., Anawalt—Johnson Bldg., housing Anawalt Drug Co., Kasdin Brothers Clothing Store; loss \$18,000.

W. Va., Buffalo—J. A. Cochrane's store; Charles Raynes' residence; loss \$25,000.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

Mo., St. Louis—Knights of Columbus, Wm. Elchensner, member, Bldg. Comm., 104 N. Seventh St.; reported, receiving bids, to be opened about Feb. 24, for \$175,000 addition to bldg., Olive St. near Grand Blvd.; fireproof, brick and rein. conc., 4 stories and basement, 147x99 ft., auditorium, swimming pool; steam, Turkish and vapor baths, 6 bowling alleys, etc.; Walter F. Sheehan, advisor for architectural plans.

Mo., University City, St. Louis—Knights of Columbus, 1229 Waldron Ave., have plans in progress for \$40,000 fireproof lodge bldg.; 2 stories, basement and sub-basement, 51x124 ft., terrazzo, linoleum and wood floors, conc. foundation, comp. roof; Alfred J. Johnson, Archt., 585 Kingsland Ave.; P. J. Markmann, Engr., First Nat'l Bank Bldg.; date of completing plans not determined. 2-6

Tex., Brenham—Benevolent Protective Order of Elks, Fred L. Amsler, Chmn., Bldg. Comm., Post Dispatch Bldg., erect \$30,000 lodge bldg.; brick veneer, 2 stories; Chase & Salisbury, Archts., Houston.

Bank and Office

Fla., Tampa—Tampa Gas Co., John Gribbel, Pres., 1513 Race St., Philadelphia, Pa., have plans for \$200,000 to \$300,000 office bldg. ready for contractors by Feb. 24; separate bids from manufacturers of ventilating system; probably 4 stories, about 100x100 ft.; M. Leo Elliott, Inc., Archt., 706 Franklin St., Tampa, and St. Petersburg, Fla. See Want Section—Building Material and Equipment. 2-13

Ky., Louisville—Louisville Trust Co. will remodel first and second floors of old Louisville Trust Co. Bldg., Fifth and Market Sts., for quarters; modernize elevator system; marble flooring and wainscoting; change entrances and fixtures; new vault in basement; D. X. Murphy & Bro., Archts., Louisville Trust Bldg.

Md., Baltimore—American Oil Co., 14th floor American Bldg., Walter K. Plumb, Asst. Gen. Mgr., leased 13th and majority of 12th floors; also improve with new paneling, etc.; Mr. Plumb advises no plans drafted.

Md., Baltimore—Mercantile Savings Bank, Fayette St. and Park Ave., repair bldg. noted damaged by fire at \$25,000 to \$50,000 loss.

Miss., Houston—Houston State Bank receiving bids for conc. and steel bldg.; 2 stories, 36x60 ft., tile floors, conc. foundation, comp. roof; Hanker & Cairns, Archts., Court Square Bldg., Memphis, Tenn. See Want Section—Building Material and Equipment. 2-13

Mo., Kansas City—Standard Oil Co., J. W. Wilson, Mgr., 5301 E. Ninth St., has permit for \$100,000 office bldg., 3964 Main St.; 3 stories, 116x87 ft.; plans by Schlitz & Bailey, Const. Engrs., 53 W. Jackson Blvd., Chicago, Ill. 12-26

Mo., St. Louis—Lorenzo E. Anderson & Co., Arthur C. Hilmer, Pres., remodel and erect addition to office bldg., St. Charles St. near Seventh St.; brick and rein. conc.; Mauran, Russell & Crowell, Archts., Chemical Bldg.

Mo., Webster Groves, St. Louis—Webster Groves Trust Co., E. S. Healey, Pres., 7 N. Gore St., erect \$40,000 addition; brick, 2 stories; C. L. Thurston, Archt., Gorelock Bldg.

S. C., Anderson—Anderson Building Corp.; 10-story office bldg.; Meigs, Long & Beale, Engrs., 1001 Chestnut St., Philadelphia, Pa., advise project has been abandoned and site used for other purposes. 2-21-29

Tex., Dallas—J. W. Crowder Realty Co., 1711 Santa Fe Bldg., plans to soon start work on 25-story National Bldg., Commerce and Lane Sts.; white Bedford stone, 163x100 ft., indirect lighting; piping and conveyors within walls; L. R. Whitson and T. P. Roberts, Archts., Santa Fe Bldg. 12-19

Tex., Dallas—Louis W. Hickey, member, Hickey & Harrington, contractors, Constr. Industries Bldg., advises in regard to report of erection of Petroleum Bldg., that has not figured on such a job. 2-13

Tex., Fort Worth—Home Abstract Co., Jack Rattikin, Pres., 103½ Sixth St., plans 10- to 15-story office bldg.; brick, steel and rein. conc., about 50 x 110 ft.; architect not selected. 12-26

Tex., Lubbock—West Texas Gas Co., owned by Prairie Oil & Gas Co., Independence, Kansas, has permit for \$63,000 office building.

Va., Richmond—Federal Reserve Bank of Richmond, Geo. W. Seay, Gov., plans \$700,000 to \$800,000 addition, Ninth and Franklin probably be complete in 90 days; 75x120 ft.; Sts.; Taylor & Fisher, Archts., Baltimore Trust Bldg., Baltimore, Md., drawing plans, colonnade front. 10-31

Churches

Ga., Cairo—Presbyterian Church, Judge R. C. Bell, Chmn., Bldg. Comm., receives bids Feb. 18 for brick veneer bldg.; conc. footings, hardwood floors, comp. roof; auditorium, 12 classrooms; T. Firth Lockwood, Archt., Murrah Bldg., Columbus; following contractors estimating: A. L. Miller; P. E. Jirright Construction Co., both Thomasville, Ga.; Jacobs & Herrington, Ashford, Ala.; Huber Construction Co., Moultrie, Ga.

Ky., Hodgenville—Methodist Episcopal Church, South, care Bishop Horace M. DuBose, Nashville, 200 16th Ave., S., plans Lincoln Memorial M. E. Church, South.

Ky., Louisville—Broadway Christian Church, Dr. W. N. Briney, Pastor, selected site for \$200,000 bldg., Douglass Blvd. near Bardstown Rd.; plans to start work before July 1; auditorium to seat 900. 11-28

Md., Parkville, Baltimore—St. Johns Lutheran Church, Rev. C. Wiebling, Pastor, Putty Hill Blvd., opens bids Feb. 18 for \$50,000 bldg.; stone, 1 story; John Freund, Archt., 1307 St. Paul St., Baltimore. 12-26

Miss., Flora—Methodist Church, Geo. K. Farr, Chmn., Bldg. Comm., plans brick building.

Mo., Springfield—Church of Christ have plans started in about 1 month for \$17,000 field stone bldg.; glazed tile interior, wood beam roof, 1 story, basement and balcony, 75x40 ft., cement and yellow pine floors, conc. foundation, asbestos shingle roof; equipment, etc., \$3000; address all proposals to R. P. Hardin, Chmn., Bldg. Comm., 633 Cherry St.; Eugene F. Johnson, Archt., McDaniel Bldg. 2-13

Mo., Springfield—Assemblies of God Church, Rev. J. R. Elson, Chmn., Bldg. Comm., having plans drawn by Earl Hawkins, McDaniel Bldg., for \$20,000 Spanish type bldg., Campbell Ave. and Calhoun St.; 2 stories and basement, 60x75 ft.; auditorium seat 500, choir 300; 11 classrooms in basement. 2-13

Mo., St. Louis—St. Nicholas Greek Orthodox Church probably have plans ready about middle of March for bids on \$250,000 bldg., Forest Park Blvd. near Kingshighway; Byzantine type, brick, stone and terra cotta, 2 stories and basement, polychrome terra cotta interior, auditorium seat 750; parish house; move present bldg.; E. K. Eugene, Archt., 436 E. 79th St., Chicago, Ill., and 824 Market St., St. Louis. 9-19

Okla., Sayre—First Christian Church has plans completed for bldg.; no definite steps taken toward starting work.

Okla., Sayre—First M. E. Church, South, opens bids Feb. 24 for brick, steel and stone trim Sunday school; \$16,000, 3 stories, 48x48 ft., wood floors, conc. foundation, comp. shingle roof; Hawk & Parr, Archts., Cotton Exch. Bldg., Oklahoma City. Address Rev. T. N. Weeks, Pastor.

S. C., Lake City—Methodist Church, J. L. Richardson, member, Bldg. Comm., plans building.

Tex., San Saba—Church of Christ probably let contract in few days for \$15,000 building.

Va., South Boston—Main St. Methodist Church, J. W. Lasley, member, Finance Comm., plans \$40,000 bldg., Main and Jefferson Sts.

Va., Newport News—First Baptist Church opens bids Feb. 25 on brick, conc. and steel Sunday school; 4 stories, 42x98 ft., slab floors over metal joists, conc. foundation, slate roof. Address Herbert L. Cain, Archt., Grace Securities Bldg., Richmond, Va. See Want Section—Building Material and Equipment.

Va., Tenn., Bristol—Anderson Street M. E. Church, South, W. O. Bennett, Chmn., Bldg. Comm., erect 3-story brick bldg. site present

structure; \$65,000, 39x70-ft. auditorium; plans by Bd. of Extension of M. E. Church, South, Louisville, Ky.; bids in.

W. Va., McMechen—Methodist Church erect 3-story addition to bldg., Eighth and Marshall Sts.; drawing plans.

City and County

Ala., Anniston—City has low bid at \$37,600 from Duke & Stickney for addition to Carnegie Library; 1 story, 72 x 68 ft.; Frank Lockwood, Archt., 119 Adams St., Montgomery. 12-26

Ark., Pine Bluff—City, reported, votes Apr. 8 on \$63,000 library bonds. 1-30

Fla., Hogan, South Jacksonville—Duval County Bd. of Commrs. having plans drawn by Jefferson D. Powell, Archt., Professional Bldg., Jacksonville, for \$15,000 girls' dormitory, Duval County Parental Home; solid brick walls, wood joists and studs, 2 stories, 60.6x38.6 ft., pine and tile floors, conc. foundation, comp. shingle roof; furnishings, equipment, etc., \$3000; Duval County let contract to Van Dorn Iron Works, 2685 E. 79th St., Cleveland, O., for work in connection with repairing jail. See Want Section—Building Material and Equipment.

Ga., Augusta—Richmond County Commrs., C. J. Skinner, Chmn., Bldg. Comm., plan to remodel courthouse; about \$47,000; J. C. Story, Archt., Leonard Bldg.; estimate of cost submitted by Claussen-Lawrence Construction Co., 1394 Gwinnett St.

Ky., Lexington—Fayette County Fiscal Court, Chester D. Adams, Judge, having plans drawn by Frankel & Curtis, 401 Hernando Bldg., for \$100,000 addition to jail, E. Short St.; 3 tiers of cells, accommodate 40 each; probably complete plans in about 30 days; also having plans drawn for new jail. 2-6

Md., Baltimore—City Council, Committee on Markets, approved resolution requesting Bd. of Estimates to report on plan for roof of one or more decks over Lexington Market for automobile parking.

Miss., Clarksdale—Clarksdale & Coahoma County Chamber of Commerce interested in erection of public auditorium.

Miss., Vaiden—Carroll County Bd. of Supvrs., Carrollton, receive sketches from architects March 3 for repairs to courthouse and courthouse roof. 1-23

Mo., St. Louis—Board of Public Service, City Hall, reported, receives bids March 4 for comfort station, Compton Hill, Reservoir Park; brick, conc. floors, tile roof, hot water heat, 25x50 ft., 1 story; A. Osburg, Archt., City Hall. 10-17

N. C., Gastonia—City, H. Rutter, City Mgr., having plans drawn by Hugh White, Archt., 207 W. Fourth Ave., for \$25,000 Colonial library; hold 15,000 volumes; plans ready about 3 weeks. 2-13

N. C., Wilmington—City Comsn. has low bid at \$13,300 from U. A. Underwood Co. to remodel old market place, Front St. near Ann St.

Tenn., Memphis—City Comsn. plans curb market; conc. stucco, brick, glass and screens 1 story, 300 stalls; E. L. Harrison, Archt., Fidelity Bk. Bldg.

Tex., Galveston—Galveston County Commrs., Court, John Egert, Chmn., Jail Bldg. Comm., plans jail annex; 3 stories, accommodate about 75; D. N. McKenzie, Archt., 2107½ E St.

Va., Marion—Smyth County votes at special election March 11 on \$35,000 bonds to repair and enlarge jail; Stone & Stone, Archts., Bristol. 1-16

Va., Norfolk—City Council authorized J. C. Biggins, City Mgr., to engage architect for fire station, Kecoughtan; \$8000 to \$10,000.

Dwellings

Ala., Birmingham—Mountain Brook Land Co., care Jamison & Co., 221 N. 21st St., erect brick and stone dwelling, Mt. Brook Estates; 2 stories; Turner & Slater, Archts., Martin Bldg.

Ala., Birmingham—Sam C. Molloy, Archt., Protective Life Bldg., has plans about completed for brick veneer dwelling, Mt. Brook Estates; 2 stories, 68x32 ft., slate roof, steam heat.

Ala., Tuscaloosa—Dr. Geo. Searcy erect 2-story brick and half-timber residence; Turner & Slater, Archts., Martin Bldg.

D. C., Washington—C. H. Gaskins, 5913 Georgia Ave., N. W., has permit for 2 brick dwellings, 419-23 Oneida Place, N. W.; 2 stories; \$16,000.

D. C., Washington—Shelbourne Co., Inc., has permit for 5 brick dwellings, 2000-08 M St., 2 stories; \$25,000.

D. C., Washington—Edwin Jacobson, 1616 K St., N. W., has permit for 2 dwellings, 5416-21 Nebraska Ave., N. W.; brick, tile; \$18,000.

D. C., Washington—C. I. Johnson and A. M. Shepard, 222 8th St., N. E., have permit for \$10,000 dwelling, 5324 Thirty-second St., N. W.; 2 stories; brick and stone.

Fla., Coral Gables, Miami—Mrs. Walter E. Bell, 1115 Fifth Ave., New York, having plans drawn by Wade & Oemler, Archts., Exchange Bldg., Miami, for \$30,000 to \$35,000 residence, Granada Blvd. near Biltmore Hotel; rein. conc. block and stucco, cast stone trim, 2 stories, tile and oak floors, tile roof, tile baths, steel sash, orna. iron; garage; ready for bids about 30 days. 2-13

Fla., Lakeland—Dr. W. R. Groover's residence; H. D. Mendenhall, Archt., Drane Bldg., advises project held in abeyance. 2-6

Ga., Blakely—John H. Williams erect brick residence; 2 stories and basement, hardwood floors, tile baths, steam heat, slate roof; T. Firth Lockwood, Archt., Murrah Bldg., Columbus. 2-13

Fla., Winter Park—Arthur M. Harris receives bids Feb. 21 for ordinary type tile and stucco residence; \$30,000; 1 and 2 stories and part basement, oak, tile and comp. floors, conc. and conc. block foundation, cement tile roof; Maurice E. Kressly, Archt., Smith Bldg., Orlando. See Want Section—Building Material and Equipment. 2-13

Ga., Newnan—Garland M. Jones receives bids Feb. 21 for \$50,000 brick residence; 2 stories and basement, conc. footings; R. Kennon Perry, Archt., Mort. Guar. Bldg., Atlanta. 2-13

La., Monroe—Ike Dembenski, 416 Wood St., erect residence; Jones, Roessle, Olschner & Weiner, Archts., Ardis Bldg., Shreveport; bids in.

La., New Orleans—L. L. Beene, 4420 Fairfield Ave., has low bid at \$18,094 from C. A. Hodges, for alterations to residence; Seymour Van Os, Archt., City Bk. Bldg.

La., New Orleans—Leon C. Weiss, 518 Walnut St., erect brick veneer residence, Dominican and Millaudon Sts.; 2 stories and basement, oak and rubber floors, marble and tile work, slate and comp. roof, hot air heat; Weiss, Drevfous & Selferth, Archts., Maison Blanche Bldg.; receiving bids.

La., Shreveport—Colgate Realty Co. erect \$15,000 dwelling, Atkins Ave.; stucco, 1 story; M. D. Weeks, Archt., Ardis Bldg.

La., Shreveport—Sam D. Hunter, Commercial Bank Bldg., rejected bids for residence; H. E. Schwarz, Archt., Slattery Bldg.

Md., Baltimore—Dr. J. H. Ferguson, Jr., Medical Arts Bldg., have plans ready about Feb. 20 for bids for \$35,000 residence; brick, 2 stories; Fredk. Thomas, Archt., 726 E. 33rd St.

Md., Baltimore—J. L. Hooper, 5533 Gwynn Oak Ave., erect \$30,000 residence, Tunbridge Rd.; stone, 2½ stories; Cyril H. Hebrank, Archt., 3 E. Lexington St., advises 3 weeks before bids will be received.

Md., Baltimore—E. R. Day, Archt., 1713 N. Carolina St., receiving bids for duplex, 4112 N. Charles St.; \$20,000, brick, 2½ stories.

Md., Baltimore—T. Russell Hicks, 106 W. Madison St., erect painted brick residence, Goodale Rd., Homeland; Palmer & Lambdin, Archts., 513 N. Charles St.

Md., Towson, Baltimore—J. France, Calvert Bldg., Baltimore, plans 3-story stone residence; Wm. Gordon Beecher, Archt., 12 E. Pleasant St.; drawings not started.

Mo., Kansas City—Hal A. Stonebraker, Archt., Balcony Bldg., drawing plans for \$30,000 frame dwelling; 2 stories.

Mo., Kansas City—H. G. Oehschlager, 424 W. 59th St. Terrace, has permit for \$10,000 residence, 1239 W. 63rd St.

Mo., Kansas City—E. F. Reyburn, 6642 Main St., has permit for \$25,000 dwelling, 1001 W. 64th Terrace.

Mo., St. Louis—F. S. Schettler, care W. P. Manske & Associates, Archts., 4526 Olive St., erect brick and stucco residence, Bowen St., Holly Hills; 1½ stories and basement, 46x27 ft.; bids in.

Mo., St. Louis—A. E. Lazier, 733 S. Berry Rd., erect 2 brick dwellings, Glendale; 24x30 ft.; \$10,000.

Mo., St. Louis—J. Harry Rehme, care Preston J. Bradshaw, Archt., 718 Locust St., erect brick residence, West Drive, Lake Forest; 2 stories and basement, 39x80 ft.; Brussel & Viterbo, Engrs., Arcade Bldg.; bids Feb. 13.

Mo., St. Louis—W. Cullen, 6033 Enright St., erect 2-story brick residence, 5700 block Waterman Ave.; C. R. Kohlmeier, Archt., 720 E. Pacific Ave.

Okla., Oklahoma City—Ethel Rollins erect 3 brick duplexes, 1416-24 W. 46th St.; \$15,000.

Tenn., Chattanooga—W. W. Dupre, Belvoir Place, plans \$200,000 building program during 1930.

Tenn., Columbia—P. Garber, E. Ninth St., considers erecting residence.

Tenn., Memphis—Dr. Louis F. Boyd, Exchange Bldg., erect brick veneer residence, Central Ave. near Highland St.; 1 story, hardwood floors, tile bath, comp. or tile roof; preliminary plans.

Tenn., Nashville—S. P. Moore, Hillsboro Rd., erect brick veneer residence, Hillsboro Rd.; 2 stories and basement, 46x64 ft., with 18x37-ft. wing; Jos. W. Hart, Archt., 322 Jackson St.; bids in.

Tenn., Nashville—Robt. A. McFadden, Ind. Life Bldg., erect native stone and frame residence, Linden Ave.; 2 stories and basement, 22x36 ft.; C. K. Colley & Co., Archts., Fourth and First Bldg.; bids in.

Tex., Austin—Elgin Standard Brick Manufacturing Co. erect 2 brick veneer dwellings and garage; \$10,500; Edwin Kreisle, Archt., Scarbrough Bldg.

Tex., Fort Worth—J. P. Gordon erect \$10,500 residence, 3521 Bellaire Drive; brick veneer and stone.

Tex., Houston—Idylwood Building Co. incorporated; John A. Embry, member, care Embry & Gillette, Scanlon Bldg.; erect brick veneer dwellings, Idylwood.

Tex., Houston—Fantham & Fantham, Second Natl. Bank Bldg., plan number dwellings, Windermere.

Government and State

Ark., Searcy—Arkansas National Guard, Little Rock, plans armory; brick and conc., about 75x100 ft., \$20,000.

D. C., Washington—Custodian, Post Office, receiving bids, date of opening not determined, for repairs and painting.

Fla., Gainesville—Custodian, Post Office, receiving bids, date of opening not determined, for repairs and painting.

Fla., Lakeland—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids March 27 for extension and remodeling of post office; 1 story and basement, about 6000 sq. ft. ground area; about \$90,000; drawings from office Supvg. Archt.

Ga., Atlanta—State, Dr. L. G. Hardman, Gov.; \$250,000 repairs and improvements to State Capitol; Edwards & Sayward, Archts., 101 Marietta Bldg., advises date of receiving bids not set. 2-6

Mo., Jefferson City—State, Henry C. Caulfield, Gov., released \$750,000 for erection of intermediate reformatory; to appoint bldg. comsn. to work in connection with prison board in planning structure. 1-23

Mo., Nevada—U. S. Property & Disbursing officer, receives bids March 7 at 3620 Main St., Kansas City, for lavatory bldgs., mess hall, garbage incinerator and plumbing fixtures, Camp Clark.

N. C., Fort Bragg—War Dept., Office Constructing Quartermaster, Fort Bragg, receives bids in triplicate until March 1 (extended date) for 16 non-commissioned officers' quarters; \$105,000; information on request. 1-23

Tex., Sabine Pass—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., probably soon start work on \$375,000 quarantine station.

Tex., Randolph Field, Schertz—Constructing Quartermaster, Capt. A. W. Parker, rejected bids for operations and parachute bldgs. and for fire house, Randolph Field; revise plans, call for new bids. 2-13

Tex., Randolph Field, Schertz—Constructing Quartermaster, Capt. A. W. Parker, Randolph Field, selected W. E. Simpson Co., Milam Bldg., as engineer for (1) \$80,000 academic bldg., (2) two \$150,000 bachelor officers' quarters, (3) \$60,000 bachelor officers' mess hall, and (4) 11 field officers' quarters, total \$160,000; selected Matthews & Kenan, Smith-Young Tower, as engineers for (5) \$45,000 Post exchange; (1) 2 stories and basement, 50x200 ft., masonry; Ralph H. Cameron, Archt., Majestic Bldg.; (2) and (3) 2 stories and part basement, rein. conc. and stucco, tile roofs; Phelps & DeWees, Archts., Gunter Bldg.; Herbert S. Green, Archt., Alamo Natl. Bk. Bldg.; (4) 2 stories, masonry; (5) 1 story, irregular shape, about 180x280 ft., masonry; contain cold storage

plant, stors. garage and filling station; Robt. B. Kelley, Archt., Milam Bldg.; W. E. Simpson Co. also engineers for \$200,000 hospital, Geo. Willis, Archt., Bldrs. Exchange; for 2 cadet barracks and for cadet mess hall and recreational bldg., \$480,000, Emmett T. Jackson, Archt., Bldrs. Exchange; Matthews & Kenan also engineers for \$75,000 School of Aviation Medicine, Adams & Adams, Archts., Real Est. Bldg., all San Antonio. 1-16

Va., Fort Myer—Quartermaster, Fort Myer, receives bids March 6 for alterations to bldg. No. 86, bachelor officers' quarters.

Va., Hampton Roads, Norfolk—House of Representatives will soon act on General Shore Construction Bill involving \$10,000,000; amount of \$600,000 included for barracks at Naval Station, Hampton Roads Naval Base, and \$200,000 for administration bldg., Air Station; Menalcus Lankford, member, Naval Affairs Comm. of House.

Va., Norfolk—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., plans post office; \$1,150,000 for project included in Public Buildings Bill passed by House and awaiting action before Senate. 7-11

Va., Yorktown—Navy Dept., Bureau of Yards and Docks, Washington, D. C., receives bids March 5 for garage, extension to shop bldg. and storage bldg., Navy Mine Depot; Detroit Steel Products Co., 328 Barr Bldg., Washington, estimating.

Hospitals, Sanitariums, Etc.

Ark., Booneville—Arkansas Tuberculosis Sanatorium let contract to J. H. Reddick, Kennedy Bldg., Fort Smith, for 2 hospital bldgs.; \$114,000; R. E. Williams, Engr., Home Insurance Bldg., Little Rock; Haralson & Nelson, Archts., Merchants Bk. Bldg., Fort Smith; semi-fireproof, hollow tile and stucco, 2 stories, stone foundations. 2-13

Ark., Fort Smith—Sparks Memorial Hospital, Allan Kennedy, Chmn., Bldg. Comm., plans \$150,000 hospital; raising funds.

Ga., Macon—City, Glenn Toole, Mayor, votes March 18 (lately noted Feb. 18) on \$100,000 hospital bonds. 2-6

Ga., Savannah—Executive Comsn. to erect \$125,000 charity hospital for negroes is having plans drawn by Cletus W. Bergen, Archt., Liberty Bk. & Tr. Bldg.; Robt. M. Hitch, Savings Fire Ins. Bldg., chmn. of commission. 2-6

N. C., Morganton—Billing Sanatorium having plans drawn by Benton & Benton, Archts., Fidelity Bldg., Wilson, for \$75,000 fireproof hospital; 3 stories, 2 wings connected by arcade, 34x86 ft., wood floors over conc. foundation, slate roof.

N. C., Oteen—U. S. Veterans Bureau, L. H. Tripp, Ch., Constr. Div., Arlington Bldg., Washington, D. C., plans central heating plant, boiler house and laundry, and landscaping, U. S. Veterans Hospital, Col. H. C. Dodge, Medical Officer in Charge; work probably start on boiler house and laundry before end of year.

Tex., Galveston—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., probably complete plans and call for bids about March 1 for Marine Hospital, M and 43rd Sts.; \$740,000 appropriated; T-shape main bldg., 3 stories, 314x163 ft., front section to have 12,100 sq. ft. floor space on each floor, rear section 2 stories, to cover 8990 ft. ground area; contain 100 beds, administration offices, kitchen, dining rooms, laundry, heating plant, refrigerating plant, six 10x54-ft. screened porches; other bldgs. include M. O. C. residence, officers' quarters, nurses' quarters and garage. 10-10

Tex., Houston—City, W. E. Montelth, Mayor, receives bids Feb. 26 at office City Sec. for children's ward and remodeling present ward, Jefferson Davis Hospital.

Tex., Houston—General Advisory Comm. on Bond Issues voted to include \$1,500,000 for hospitals in bond issues to be voted upon during 1930; City and Harris County may call election for March 22.

Tex., Liberty—Dr. H. Caplovitz and Dr. L. Harris interested in erection of \$20,000 hospital.

Hotels and Apartments

Ala., Birmingham—Wofford Bond & Mortgage Co., W. D. Lindsay, Sec., 2027 3rd Ave., N., soon let contract for 3-story and basement, 161x33 ft., brick, stone, stucco and frame apartment in Redmont Park; C. H. McCauley, Archt., Jackson Bldg., Birmingham.

Ala., Monroeville—G. L. Nettles soon let contract for \$40,000, 2-story and basement, 116x85 ft., brick and frame, 40-room hotel; built-up roof, steam heat, stores on first

floor; Warren, Knight & Davis, Protective Life Bldg., Birmingham, and C. C. Yonge, Mobile, Asso. Archts.

Ark., Little Rock—J. M. Wells has permit for \$25,000 brick veneer apartment, 5207-09 J St.

Fla., Fort Lauderdale—Fort Lauderdale Hotel Co.'s \$750,000 hotel still in abeyance; Wm. A. Bennett, Archt., Real Estate Bldg., Miami. 6-6

Fla., Jacksonville—Marsh & Saxelbye, Archts., Consolidated Bldg., advise regarding proposed 15-story and roof garden addition to Hotel George Washington for Robert Kloepfel: "This job at present time is not going ahead; however, within next year something might be done about it." 5-16

Fla., Miami Beach—C. LeRoy Kinports, Archt., 3897 Kumquat Ave., Coconut Grove, Miami, have plans completed in about 20 days for \$50,000, 3-story, rein. conc. conc. block and stucco apartment, 37th St. and Indian Creek.

Ga., Atlanta—Massell Realty Co., 165 Spring St., N. W., reported, plans \$100,000, 2-story and basement, brick veneer apartment, Peachtree Road and Andrews Drive; E. C. Seiz, Archt., 161 Spring St.

Ga., Dalton—Dalton Hotel Co., H. J. Smith, Pres., erect addition to hotel; 28 rooms, brick, comp. roof; A. Ten Eyck Brown, Archt., Forsyth Bldg., Atlanta. 8-22

La., New Orleans—Walter Cook Keenan, 4239 St. Charles Ave., has permit for \$10,000 alterations to residence, 7817 St. Charles Ave., for apartment.

Miss., Greenville—George Abraham, Jr., soon let contract to remodel old Greenville Military Academy for 8 apartments; \$10,000; H. W. Lathrop, Archt. 12-26

Mo., Fulton—J. W. Gallaher, Mexico, erect 32-room hotel apartment on site old Synodical College; \$100,000.

Mo., St. Joseph—M. Thomas, 2530 Pacific St., erect \$15,000, 2-story brick apartment, 2402 Pacific St.

Mo., University City, St. Louis—E. J. Peterson, 9196 Washington Blvd., erect \$10,000, 2-story, 29x48 ft. brick flat, 7227 Dartmouth St.; slate roof, steam heat.

N. C., Henderson—Ancient Free and Accepted Masons having preliminary plans prepared by Eric G. Flannagan for \$200,000 hotel.

Okla., Oklahoma City—Buren B. Day, Okla. Savings & Loan Bldg., plans erecting apartment, 409 W. 11th St.

Okla., Oklahoma City—Blakeney Co., Liberty Natl. Bldg., erect 8-story, steel, conc. and brick 100-apartment hotel, W. 23rd and Harvey Sts.

Tex., San Antonio—M. I. Hallam, Maverick Bldg., has permit for \$11,500, 18-room apartment, W. Craig Place.

Tex., San Antonio—Swiss Plaza Co., Henry A. Robards, Sec., Bldrs. Exchange Bldg., plans to proceed in about 60 days with laying out streets and working out details for \$1,000,000 Swiss Plaza Apartment Hotel, N. and Seventh Sts.; Phelps & Dewees, Archts., St. Marys St. and Avenue B between Fifth Gunter Bldg. 11-21

Tex., San Antonio—Gunter Hotel, T. B. Baker, plans to enlarge laundry and remodel boiler room; install 5 boilers.

Miscellaneous

Ark., Piggott—Piggott Athletic Assn., Harold Johnson, Chmn., erect 1-story brick gymnasium.

Ark., Rogers—Rogers Company, Charles Frederick, soon let contract for tourist camp; two 1-story, log and cement buildings; one-story log cafe bldg. and 1-story service station; \$18,000.

La., Delhi—Richland Parish School Bd., Rayville, gave permission to Delhi Branch Library to erect library on Delhi School grounds, gift of Miss Maitie E. Smith.

Mo., St. Joseph—Chamber of Commerce promoting erection \$25,000 stadium for use by Western League Baseball Club.

N. C., Black Mountain—Asheville Presbytery, Inc., plans to start work about March 1 on \$30,000, 1-story and basement, brick, conc. and steel school; Wm. H. Lord, Archt., 17 Church St., Asheville.

Okla., Oklahoma City—Dr. C. B. Kidson promoting erection \$2,000,000 civic auditorium, Western and Reno Aves.; preliminary plans call for structure to cover 147,000 ft.; seat 20,000 to 35,000 people; covered automobile parking space of 63,000 adjoining.

Tenn., Chattanooga—Kosmos-Chattanooga Woman's Club, McCallie Ave., remodel club-

house and convert adjoining houses into auditorium. 1-16

Tenn., Memphis—Lake Macon, Inc., J. W. Stone, Fidelity Bk. Bldg., has plans by Raymond B. Spencer, Dermon Bldg., for \$15,000 summer resort on Bristol Highway and Macon Road; 1 story, stone, comp. and tile roofs, wood and conc. floors. 1-16

Tex., Baytown—Humble Oil and Refining Co., Humble Bldg., Houston, rebuild Baytown-Humble Club recently noted damaged by fire at loss \$35,000; stucco and conc.

Va., Norfolk—Woman's Club of Princess Anne County, Mrs. Rufus Parks, Chmn., having plans prepared by Rudolph, Cook & Van Leeuwen, Arcade Bldg., for clubhouse; location undecided.

Railway Stations, Sheds, Etc.

Mo., St. Louis—Mauran, Russell & Crowell, Archts., Chemical Bldg., advise regarding proposed \$5,000,000 warehouse and freight terminal for Illinois Terminal R. R. System: "Things are still uncertain." 11-28

Tenn., Memphis—Illinois Central R. R., A. F. Bleass, Ch. Engr., Chicago, reported, expend \$75,000 for remodeling Tennessee Terminal and Warehouse on Front St.

W. Va., South Charleston, Charleston—Chesapeake & Ohio Rwy. Co., C. W. Johns, Ch. Engr., Richmond, Va., plans to begin work soon on \$25,000, 25x100 ft. frame addition to freight station; extend unloading platform 250 ft.; let contract at \$12,500 to Dravo Construction Co., Pittsburgh, Pa., to repair and reinforce ramp.

Schools

Ala., Auburn—Alabama Polytechnic Institute, Dr. Bradford Knapp, Pres., has low bid at \$752,200 from W. L. Coston, Bessemer, for four buildings—shop building, 1 and 2 stories and basement, 250x50 ft.; administration building, 2 stories and basement, 233x49 ft.; auditorium, 1 story and basement, 144x132 ft.; textile building, 2 stories and basement, 300x60 ft.; rein. conc., struc. steel, brick and tile; tile, terrazzo and conc. floors; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham. 1-30

Ala., Tuskegee Institute—Tuskegee Institute, Dr. Robt. R. Moton, Prin., announced gift of \$250,000 from General Education Bd. for erection science hall and library; similar amount to be raised from other sources.

Ark., Belleville—School Bd. plans \$50,000 school building.

Ark., North Little Rock—School Bd. plans stadium to seat 3000 to 5000 people.

Ark., Paris—Prairie Special School Dist., W. P. McCubbin, Pres., plans \$15,000, 1-story, brick veneer, 6-room school.

Ark., Pine Bluff—Southwest Consolidated School Dist. No. 1, W. P. Keith, Supt. of Schools, plans two 1-story, brick veneer, 5-room schools.

Ark., Pine Bluff—School Bd. plans 1 or 2-story brick and conc. school, 17th and Indiana Sts.

Ark., Salem—Fulton County Bd. of Education, F. C. Gibson, Supt., plans 1 or 2-story brick and conc. school in Consolidated School Dist.

Ark., Scranton—Scranton Special School Dist. plans \$30,000, 1-story brick veneer school; W. H. Houser, Logan County Supt. of Schools, Paris.

Fla., Highland City—Polk County Bd. of Instruction, Bartow, soon have plans completed by D. Holsinger, Bartow, for \$15,000 school.

Ga., Atlanta—Chi Phi Fraternity, Emory University, has low bid from Christian & Bell, Red Rock Bldg., for \$35,000, 2-story and basement, 65x52 ft., brick veneer and frame fraternity house; limestone trim, slate roof; Hentz, Adler & Shultz, Archts., Candler Bldg. 1-30

Ga., Forsyth—Monroe County Bd. of Education, Dr. T. D. Thurman, Supt., ready for bids about Feb. 24 for \$50,000, 2-story, brick high school; comp. roof, stone trim; Wm. J. J. Chase, Archt., 140 Peachtree St., N. E., Atlanta. 1-9

Ga., Moniac—Moniac School Dist. votes March 10 on \$15,000 bonds for school to replace burned structure.

La., Baton Rouge—State School for Blind, A. J. Caldwell, Supt., ready for bids about May 1 for 2-story, brick administration and auditorium building, brick hospital, etc.; Favrot & Livaudais, Archts., Hibernia Bk. Bldg., New Orleans.

La., Bogalusa—City, K. I. Bean, City Clerk, receives bids March 18 for following school improvements: Two-story, brick, 12-classroom grammar unit to high school; 2-story brick and frame W. H. Sullivan Me-

morial Manual Training School unit to high school; heating plant additions and alterations to high school; 1-story, brick, 6-classroom unit and auditorium to Central School; any bidder may bid on all 4 units or as many units as he desires; plans from Rathbone DeBuys, Archt., Hibernia Bk. Bldg., New Orleans. 12-26

La., Elton—Jeff Davis Parish School Bd., Jennings, receives bids March 8 for 2-story, brick, stone trim, 8-room high school adjoining present school, for auditorium building on opposite side and remodeling present building; \$90,000; Wm. T. Nolan, Archt., Canal Bk. Bldg., New Orleans. 12-26

La., Franklin—Following contractors estimating on \$110,000, 2-story, 154x160 ft., brick and rein. conc. high school, bids March 3 by Washington Parish School Bd., D. H. Stringfield, Sec.: Reilly-Ruckstuhl, Inc.; Reimann Construction Co., Maritime Bldg.; J. V. & R. T. Burkes, Inc., New Orleans Bank Bldg.; Caldwell Bros., 816 Howard St.; A. Garrett, Maritime Bldg., all New Orleans; L. W. Eaton, 1601 North Blvd.; A. C. Stewart, 1810 E. Blvd.; D. E. Chapman, Southdowns St., all Baton Rouge; R. L. Roland, 1908 Lee St., Alexandria; G. L. Whitaker & Son, Tylertown, Miss.; Keeton & Fairley, Hattiesburg, Miss.; E. E. Rabalais & Son, Bunkie; P. Olivier & Son, 114 Bilbo St., Lake Charles; J. T. McDonald & Son, Pass Christian, Miss.; Dye & Mullins, Belzoni, iss.; Welch & McLain, Lumberton, Miss.; Dominick Anzalone, Independence; A. LeBlanc, Bogalusa; Herman J. Duncan, Archt., 120 Murray St., Alexandria. 2-6

La., Hosston—Caddo Parish School Bd., E. Weldon Jones, Supt., Shreveport, having plans prepared by Edw. F. Neild, Archt., City Bk. Bldg., Shreveport, for 2-story, rein. conc., brick, stone trim school; built-up comp. roof; \$100,000 bonds voted. 1-2

La., Mt. Hermon—Parish School Bd., Franklinton, called election March 18 on \$30,000 bonds in Mt. Hermon and Sunny Hill Dist. for school 2 mi. south of Mt. Hermon.

La., New Orleans—Orleans Parish School Bd., A. J. Tete, Sec., having tentative plans prepared by E. A. Christy, Supvg. Archt., for \$480,000, 3-story, fireproof Academic High School for Girls, S. Claiborne and Nashville Aves.; ready for bids in two or three months; upon completion of plans for this structure, plans will be prepared for following schools for which appropriations have been approved: Replacement of Palmer School, \$225,000; building for elementary division of Allen School, \$200,000; school in Gavarre-Capdau section, \$170,000; annex to Robert E. Lee School, \$75,000; additional building for St. Philip-McDonough section, \$125,000; trade school for negroes, \$275,000.

La., New Orleans—Following contractors estimating on 4-story, 325x275 ft., rein. conc. steel, brick and stone trim, 50-classroom, Alcee Fortier High School; bids March 7 by Orleans Parish School Bd., A. J. Tete, Sec.: Caldwell Bros., 816 Howard Ave.; Charles Gibert, Canal Bk. Bldg.; R. P. Farnsworth & Co., Maritime Bldg.; J. A. Petty & Sons, Inc., Godchaux Bldg.; Geo. J. Glover Co., Inc., Whitney Bldg.; J. V. & R. T. Burkes, Am. Bk. Bldg.; This. H. Brockman, Canal Bk. Bldg.; Lionel F. Favret, Louisiana Bldg.; Richard McCarthy Co., Inc., Maritime Bldg.; Gervais Favrot, Balter Bldg., all New Orleans; E. A. Christy, Supvg. Archt. for School Bd. 2-13

La., Ringgold—Bienville Parish School Bd., E. H. Fisher, Sec.-Treas., Arcadia, receives bids March 17 for \$100,000, 2-story, brick, stone trim high school; built-up comp. roof; bonds voted; J. W. Smith & Associates, Archts., Ouachita Natl. Bk. Bldg., Monroe. 1-23

La., Zwolle—Sabine Parish School Bd., Many, ready for bids in about 10 days for \$33,000, 2-story, rein. conc., brick and stone trim school; built-up comp. roof; J. W. Smith & Associates, Archts., Ouachita Natl. Bk. Bldg., Monroe. 12-19

Md., Baltimore—Bd. of Public Improvement Comsn., E. J. Leimbach, Supvg. Engr., having plans drawn for \$215,000, 2-story, brick administration building for Bd. of Education, 25th St. between Charles and St. Paul Sts.; L. R. White, Archt.; H. G. Perring, Struc. Engr., both Court Square Bldg.

Md., Salisbury—Eastern Shore State Normal School plans \$300,000 unit.

Md., Upper Marlboro—Prince George's County Bd. of Education, Nicholas Orem, Supt., receives bids March 10 for any or all of following school buildings: (1) Mt. Rainier High School—13 rooms and auditorium; (2) Bradbury Heights Elementary School—8 rooms and auditorium; (3) Decatur Heights Jr. High School—2 rooms and basement; (4)

Cheverly Tuxedo Elementary School—2 room and basement addition; (5) Riverdale Elementary School—4-room and auditorium addition; plans from Upman & Adams, Archts., Woodward Bldg., Washington, D. C., after Feb. 22; bids will be opened at Bladensburg School, Defense Highway and Edmondson Rd., Bladensburg. 2-6

Miss., Jackson—Bellhaven College, Dr. Guy T. Gillespie, Pres., receives bids Feb. 26 for \$80,000, 3-story, 97x38 ft., rein. conc., brick, stucco and stone trim dormitory; tile roof; Claude H. Lindsley, Archt., Jackson Tower Bldg. 2-13

Miss., Rockport—Rockport, Stronghope and Union Dist., defeated \$25,000 bonds for consolidated high school to be known as East Copiah High School. 1-30

Mo., Bismark—School Bd., Mrs. C. L. Kistner, has plans by Bonsack & Pearce, 411 Olive St., St. Louis, for \$40,000 school. 1-23

Mo., Hickman Mills—Consolidated School Dist. No. 1 (Hickman Mills and Holmes Park) voted \$90,000 bonds for high school and site, building to cost \$65,000; 2 stories, brick or native stone; H. B. Green, Pres. School Dist. 1-30

Mo., Jefferson City—Legislature appropriated \$250,000 for erection educational building at Lincoln University. 1-30

Mo., New Madrid—New Madrid Consolidated School Dist. No. 9 votes Feb. 25 on \$32,000 bonds to rebuild school recently noted burned; brick; Harry Sharp, Pres., Bd. of Education; Bonsack & Pearce, Archts., 411 Olive St., St. Louis. 1-9

Mo., Noel—Noel Consolidated School Dist. No. 1, John B. Page, Supt., Box 73, soon ready for bids for 1-story, stone, 10-room gymnasium and auditorium school to replace previously burned structure; \$18,700 bonds voted; Earl Hawkins, Archt., McDaniel Bldg., Springfield. 11-21

Mo., Sikeston—Sikeston School Dist. No. 54, F. E. Mount, Pres., plans 1 or 2 story, brick addition to high school. 1-30

Mo., St. Louis—Bd. of Education, Geo. W. Sanger, Act. Commr. of School Bldgs., reported, ready for bids about March 1 for \$1,500,000, 5-story, brick, steel and rein. conc. vocational school, Grand Blvd. and Bell St.; laboratory bldg., 230x160 ft.; shop bldg., 275x188 ft.; Wm. B. Ittner, Inc., Archt., Bd. of Education Bldg. 1-30

Mo., St. Louis—Riverview Gardens Public School Dist., Mrs. Etta M. Schuchardt, Sec., Baden Station, R. R. No. 14, Box 890, erect \$15,000, 1-story brick addition to School on Bellefontaine Road; also \$30,000, 2-story and basement, brick grade school; Wm. B. Ittner, Inc., Archt., Bd. of Education Bldg. 1-30

Mo., University City, St. Louis—City votes March 7 on \$225,000 bonds for sites and erection of schools at Hanley Road and Carleton Ave., Walton Road north of Olive St. Road, and high school at Jackson Blvd. and Balsom Ave. 1-30

N. C., Charlotte—Bishop William Haferty, Raleigh, approved plans of St. Peter's Catholic Church, Rev. Ambrose Gallagher, Pastor, for \$90,000 parish school; fireproof, granite walls; plans by Rev. Michael, Belmont Abbey. 1-30

N. C., High Point—School Bd., T. Wingate Andrews, Supt., selected Eccles Everhart to draw plans for \$75,000 fourth ward elementary school and Fred Klein to prepare plans for negro high school. 2-13

N. C., Newton—School Bd., W. S. Snipes, Supt., rebuild Newton High School noted burned at loss \$100,000. 1-30

N. C., Salisbury—Livingstone College plans erecting building. 1-30

N. C., Statesville—Iredell County Bd. of Education plans erecting central high school for four rural schools—Celeste, Henkel, Scotts, Monticello and Sharon. 1-30

N. C., Wilmington—New Hanover Comsn. approved request of Bd. of Education for \$355,000 for equipment and additions to schools for county; principal item was one of \$118,000 for additions to present county high school; bond issue proposed. 2-13

Okla., Edmond—City voted \$20,000 bonds to complete Edmond High School and erect physical education building. 1-30

Okla., El Reno—Highland Dist. No. 98 voted Feb. 17 on bonds for school; Miss Irma South, Supt., Canadian County Bd. of Education. 1-30

Okla., Muskogee—City defeated \$200,000 school bonds; John W. Porter, Pres., School Bd. 1-30

Okla., Muskogee—City defeated \$200,000 school bonds; John W. Porter, Pres., School Bd. 1-30

Okla., Oklahoma City—Bd. of Education, R. F. J. Williams, Pres., having plans prepared by Layton, Hicks, Forsyth, Braniff Bldg., for 3-classroom, cafeteria and gymnasium addition to Capitol Hill Jr. High School, also addition to Heronville School; having plans prepared by Hawk & Parr, First Natl. Bank Bldg., for Lee School addition. 1-30

S. C., Charleston—College of Charleston, M. Rutledge Rivers, Pres., Bd. of Trustees, receives bids March 4 at office Simons & Lapham, Archts., 42 Broad St., for alterations and extension to college; plans at office architects. 1-30

S. C., Rock Hill—Winthrop College, Dr. J. P. Kinard, Pres., erect clubhouse; Edwards & Sayward and Robt. B. Logan, Asso. Archts., both Marietta Bldg., Atlanta, Ga. 1-30

Tenn., Birchwood—Hamilton County Bd. of Education, J. E. Walker, Supt., Chattanooga, erect school; \$24,000 available; contain 6 elementary rooms, 3 high school rooms, 5 accessory rooms with library and cafeteria. 1-30

Tenn., Memphis—Sacred Heart School, Rev. Louis J. Kempf, 1324 Jefferson Ave., plans building. 1-30

Tenn., Corpus Christi—Bd. of Education having plans prepared by Diemann & Levy, State Natl. Bk. Bldg., and ready for bids about March 10 for 1-story, 3-room addition to David Hirsch School; 2-story, 4-room addition to Hillcrest School; 2-story, 12-room and clinic addition to Ward School; repairs to Jr. High School; election March 1 on \$200,000 bonds. 2-13

Tenn., Crystal City—School Bd., E. L. Ready, Pres., has low bid at \$49,095 from L. F. Hall, Crystal City, for high school; 2 stories, 63x150 ft. with 1-story wing 65x223 ft.; brick, tile and rein. conc.; Will N. Noonan Co., Archt., Bldrs. Exch. Bldg.; W. E. Simpson, Engr., Miami Bldg., both San Antonio. See Want Section—Building Material and Equipment. 2-13

Tenn., High Island—Town votes March 15 on \$12,000 bonds for school building; O. E. Kennedy, Galveston County Bd. of Education, Galveston. 1-30

Tenn., Lubbock—Bd. of Education, A. C. Jackson, Sec., receives bids March 4 for \$650,000, 2 and 3 story, brick, tile and rein. conc. Sr. High School; conc., tile, terrazzo and wood floors; accommodate 1200 students; Peters, Strange & Bradshaw, Archts., Myrick Bldg. 1-30

Tenn., Perryton—Perryton Ind. School Dist., defeated school bonds; W. B. Irvin, Supt. of Schools. 1-30

Tenn., Runge—Runge Ind. Dist. Bd. of Education, A. E. Cutler, Sec., selected Giesecke & Harris, Norwood Bldg., Austin, to prepare plans for high school to replace structure burned at loss \$75,000; 14 classrooms and auditorium. 2-13

Tenn., San Angelo—City votes March 11 on \$150,000 bonds for additions to following elementary schools: Reagan School—4 rooms; Ft. Concho School—2 rooms; San Jacinto School—4 rooms; Santa Rita School—2 rooms; Stephen F. Austin—4 rooms; South Mexican School—2 rooms; also unit at Senior High School to consist of 2 classrooms, gymnasium and basket ball court with baths, lockers and equipment for boys, physical education room for girls with baths, lockers and equipment; Felix E. Smith, Supt., Bd. of Education. 2-13

Tenn., San Antonio—Bd. of Education, Dr. J. A. McIntosh, Pres., has low bid at \$28,495 from P. F. Allan, 810 San Pedro St., for 6-room, and assembly hall addition to Frank Johnson School No. 7; Eickenrodt & Coker, Archts., Maverick Bldg.; Beretta-Stiles Co., Inc., Engr., Natl. Bk. of Commerce Bldg.; Phelps & Dewees, School Archts., Gunter Bldg. 1-9

Tenn., Sanderson—Sanderson Ind. Dist. School Bd., W. E. Stirman, Pres., ready for bids about Feb. 26 for \$110,000, 2-story, semi-fireproof high school; auditorium to seat 650 people; detached gymnasium; Ralph H. Cameron, Archt., Majestic Bldg., San Antonio. 1-30

Tenn., Vernon—School Dist. No. 10, Wilbarger County, having plans prepared by Voelcker & Dixon, Perkins Snider Bldg., 1-30

Wichita Falls, and ready for bids about March 1 for \$70,000, 2-story, brick, stone and rein. conc. high school near Vernon. 1-30

Tex., Waxahachie—Trinity University, John H. Burma, Pres., erect \$100,000, 2-story, brick, tile, rein. conc., fireproof dormitory; Flint & Broad, Archts., Melba Bldg., Dallas. 1-30

Tex., Wellington—Wellington Ind. School Dist. voted \$55,000 bonds for 2-story, brick junior high school; Guy A. Garlander, Archt., Fisk M. & P. Bldg., Amarillo. 2-13

Va., Charlottesville—School Bd., James G. Johnson, Supt., receives bids March 4 for \$175,000, 2-story, brick, stone trim, 18-classroom elementary school; Calrow, Browne & Fitzgibbon, Archts., Royster Bldg., Norfolk. 1-30

Va., Salem—School Bd., Robert W. House, Supt., considering erecting high school. 1-30

W. Va., Weston—Bd. of Education receives bids March 15 for 12-classroom unit of school; Edw. J. Wood & Son, Archts., Lowndes Bldg., Clarksburg. 1-30

Stores

Ala., Gadsden—B. B. S. Grocery Co. rebuild store noted burned at loss \$30,000. 1-30

Ark., Amity—Thompson & Co. plan one or two-story, 75x90 ft., brick and conc. store. 1-30

Ark., Jonesboro—E. J. Wolpert, Archt., preparing preliminary plans for 100x150 ft., brick and conc. store; probably 2 stories. 1-30

Fla., Jacksonville—New York Life Insurance Co., Telfair Stockton & Co., Local Agents, 329 Laura St., expend \$75,000 for remodeling five upper floors and ground floor of Y. M. C. A. Bldg., Duval and Laura Sts., to be leased to Jones Brothers Co. (furniture dealers), 317 Main St.; Marsh & Saxelby, Archts., Consolidated Bldg. 1-30

Miss., Hattiesburg—Juan G. Landry, Archt., 23rd Ave., preparing plans for interior and exterior alterations to building, 525 Main St., to be occupied by Duke's Haberdashery and Clothing Co. 1-30

Mo., Caruthersville—F. J. Cunningham plans \$20,000, 2-story, brick store and office building. 1-30

S. C., Rock Hill—J. G. McCrory & Son, 1107 Broadway, New York, erect addition to store; brick, comp. roof; A. D. Gilchrist, Archt., Rock Hill; bids in. 1-30

Tenn., Chattanooga—S. H. Kress & Co., 114 Fifth Ave., New York, plan erecting store, Market and Seventh Sts.; 3 stories, rein. conc., brick and tile, built-up roof; plans by owner's Engr. Dept. 1-30

Tex., Beeville—E. Bond has low bid at \$13,300 from C. H. Barnes, Corpus Christi, for 1-story, brick and conc. store, Washington and Bowie Sts.; Malcolm G. Simons, Archt., Bldrs. Exchange Bldg. 1-30

Tex., Houston—W. C. Czigan, 4401 Roseland Ave., erect \$40,000 brick store, La Porte Road and Broadway. 1-30

Tex., Houston—Wm. L. Pedicord, Archt., 3711 Reagan St., preparing plans for \$15,000, 2-story brick store and apartment, Dowling and McIlhenny Sts. 1-30

Tex., Mercedes—Judge L. T. Hoyt, owner of Mercedes Hotel, erect several stores; Newell Waters, Archt. 1-30

Tex., San Antonio—Wm. S. Seng, Builders Exchange Bldg., has permit for \$10,000 store on Main Ave. 1-30

Theaters

Miss., Macon—W. H. Baker and J. L. Klaus remodel interior of Dreamland Theater; Charles Davis, Archt., New Orleans. 1-30

Okla., Tulsa—Tulsa Little Theater, Joseph E. Washington, Pres., erect 1 and 2-story, brick and hollow tile theater; Donald McCormick, Archt., Atlas Life Bldg.; bids in. 12-12

Warehouses

D. C., Washington—Washington Cement Warehouse Co. has permit for \$10,000, 3-story, conc., steel and cement pack house, 3031 K St., N. E. 1-30

Tex., Houston—H. P. Mott, 2917 Louisiana St., erect \$25,000, one-story, 100x118-ft., rein. conc. and brick, fireproof warehouse, York St. and Rusk Ave.; built-up tar and gravel roof, 11,800 sq. ft. floor space; Henry F. Jonas & Tabor, Archts., Union Natl. Bank Bldg.; bids in. 1-30

BUILDING CONTRACTS AWARDED

Bank and Office

Ga., Atlanta—Raymond Concrete Pile Co., 140 Cedar St., New York, has pile foundation contract for \$1,000,000 office bldg., for Healey Real Estate & Improvement Co.; struct. steel, Virginia Bridge & Iron Co., Healey Bldg., Atlanta; Pringle & Smith, Archts., Norris Bldg.; Robt. G. Lose, Forsyth Bldg., and W. C. Spiker & Co., McGlawn-Bowen Bldg., struct. engrs.; Southern Ferro Concrete Co., Contr., 70 Ellis St., N. E., all Atlanta. 2-6

Ga., Atlanta—First National Bank, reported, let contract for 1100 tons fabricated struct. steel to Ingalls Iron Works, Birmingham, Ala., for \$750,000 annex to 16-story Fourth National Bank Bldg.; Pringle & Smith, Archts., Norris Bldg.; Barge-Thompson Co., Contr., 136 Ellis St., N. E. 12-5

Md., Baltimore — Benjamin F. Bennett Building Co., 123 S. Howard St., has contract to remodel section of first floor of Astor Apts., St. Paul and 25th St., for occupancy of Equitable Trust Co. for uptown branch.

Md., Salisbury—Salisbury National Bank clearing site for \$175,000 bank bldg.; fireproof, brick, stone and steel, 1½ stories, 48x230 ft., marble and linoleum floors, rein. conc. foundation, 5-ply built-up roof; Tilghman-Moyer Co., Archt.-Engr.-Contr., Allentown, Pa. See Want Section—Building Material and Equipment. 2-13

Tex., Houston—Chas. K. Horton, Garden Court Apts., started work on 1-story stucco office bldg., 2416 Polk Ave.; Universal Construction Co., Contr., 2201 Bell St.

Va., Roanoke—Norfolk & Western Ry. Co., W. P. Whitsee, Ch. Engr., let contract to Virginia Bridge & Iron Co. for 825 tons fabricated struct. steel for \$500,000 office bldg., Jefferson and High Sts.; fireproof, steel, conc. and brick, 7 stories, 142 x 152 ft., probably 3 elevators; fireproof storage vaults. 10-10

Churches

Ark., Paris — Christian Church plans to complete bldg.; raising funds; Haralson & Nelson, Archts., Merchants Natl. Bk. Bldg.; J. H. Reddick, Contr., Kennedy Bldg., both Fort Smith.

N. C., Lexington — Mt. Olivet Methodist Church, Rev. S. M. Needham, Pastor, erect \$30,000 Sunday school; brick, 3 stories; day labor.

Tex., Brownsville — Central Christian Church let contract for \$35,000 church and Sunday school to W. A. Velton; face brick veneer and tile, steel and wood frame, 2 stories, L shape, 90x110 ft., conc. and wood floors, conc. foundation, rigid asbestos roof; F. H. Trimble, Archt.-Engr., Merchants Natl. Bk. Bldg. 2-6

City and County

Ark., Magnolia—Columbia County, Emmett Atkinson, County Judge, let contract at \$48,900 to C. A. & J. M. O'Neal, Hope, to repair courthouse and erect jail; latter brick and conc., 2 stories, comp. roof, steel cells; Arthur A. Brown, Archt., Mercantile Bk. Bldg., Dallas, Tex. 1-30

Tenn., Ripley—City let contract for city hall and fire station to B. D. McKnight, Ripley; \$19,000; brick, 2 stories, 26x50 ft.; Claude Northern, Archt., Fidelity Bank Bldg. 1-2

Tex., San Antonio—City rejected bids to restore old Spanish Governor's Mansion for museum; \$25,000; work to be done on cost plus basis, Guy C. Holder to supervise construction; new stone tile walls, flagstone and tile floors; Harvey P. Smith, Archt., Natl. Bk. of Commerce Bldg. 2-13

W. Va., Princeton—Mercer County Court, Wade H. Bailey, Pres., let contract at \$259,000 to Boone, Eason & Wood, Bluefield, for courthouse and jail; plumbing and heating, Barger Heating & Plumbing Co., at \$25,998; elect. work, Princeton Radio & Electric Co., both Princeton; at \$6900; jail equipment, Pauly Jail Building Co., 2215 DeKalb St., St. Louis, Mo., at \$65,513; center portion 72x106 ft., 3 stories and basement; two wings, each 28x142 ft., 2 stories and basement; exterior walls faced with Indiana limestone; Alex B. Mahood, Archt., L. C. Bldg., Bluefield. 1-2

Dwellings

Ark., Little Rock—J. Merrick Moore, Boyle Bldg., completed foundation for \$35,000 resi-

dence, 20 Armisted Rd.; brick veneer, 2 stories, about 100 x 60 ft., hardwood floors, conc. foundation, tile roof; Thompson, Sanders & Ginochio, Archts., Hall Bldg.; M. F. Lawing, Contr., 4817 T St. 2-6

Ark., Searcy—G. W. Maness started work on brick veneer residence, N. Spring St.; 1 story, 6 rooms, oak and pine floors; T. E. Edens, Contr.

D. C., Washington—Chas. D. Sager, 924 Fourteenth St., N. W., erect 11 brick dwellings, 533-53 Twenty-second St., N. E., after plans by Geo. T. Santmeyers, 1416 I St., N. W.; 2 stories; \$50,000; owner builds.

Fla., Miami Beach—Milco Investment Co., care John B. Reid & Co., Fifth St., and Meridian Ave., let contract to A. H. Higgins, Fifth and Meridian, for \$10,000 dwelling; rein. conc., conc. block and stucco, 1 story, 36 x 50 ft., oak floors, tile and comp. roof; A. Arthur Rose, Archt., 537 Collins Ave. 2-6

Fla., South Jacksonville, Jacksonville—Mrs. Frances Laurel Lamb, Jacksonville, has permit for \$10,000 residence, Pearl Court and Naldo Place, Frick's Addition to San Marco; brick, 2 stories; E. M. Henderson, reported, Contr.

Fla., South Jacksonville, Jacksonville—H. F. McAden, Contr., 3327 Riverside Ave., Jacksonville, has permit for \$30,000 residence, River Rd., First Addition to San Marco.

Ga., Atlanta—L. E. Rogers, Candler Bldg., let contract for \$30,000 residence to C. R. Justl, 101 Marietta Bldg.; brick and stone, 2 stories and basement, 84x32 ft., slate roof, Kerner incinerator; Burge & Stevens, Archts., 101 Marietta Bldg. 1-23

Ga., Atlanta—Mrs. S. C. Johnson, 1518 Boulevard, N. E., erect 2 brick veneer dwellings, 1645-49 Pelham Rd., N. E.; 1 story and basement, conc. footings, hardwood floors, tile baths, comp. shingle roofs; \$14,000; owner builds.

Md., Baltimore—Joseph Pistorio & Son, Bldrs., 3427 Mondawmin Ave., erect 4 frame and stucco dwellings and garages, 511-17 Nottingham Rd.; \$20,000; also stone dwelling and garage, 5101 Brook Green Rd.; \$7500.

Md., Baltimore—H. G. Reinicker, Whitaker Bldg., erect \$15,000 stone and stucco residence, 221 Goodale Rd., Homeland; J. Oscar Creman, Contr.

Md., Baltimore—I. H. Matthews erect 3 frame dwellings, 3006-10 Rosalie Ave.; 1½ stories, 24x24 ft., steam heat; \$10,000; Benj. R. Sale, Contr., 4311 Arizona Ave.

Md., Baltimore—John Welsh, 11 E. Fayette St., erect 4 brick dwellings and garages, 419 Westgate Rd. and 400-04 Rock Glen Ave.; 1½ stories, 24x28 ft. and 22x28 ft., slate roofs; \$12,000; Geo. Wessel, Archt., 601 W. 40th St.; owner builds.

Md., Baltimore—C. K. Wells, Bldr., 3538 Old York Rd., erect stone dwelling, Greenway, Guilford; Palmer & Lambdin, Archts., 513 N. Charles St.

Md., Baltimore—Harry F. Page, Bldr., 304 Ilchester St., erect shingle dwelling, Thornhill Rd., Homeland; Wrenn, Lewis, Westenhaver & Aencks, Archts., Title Bldg.

Mo., St. Louis—Walter F. Sheehan, 721 Chestnut St., let contract to Mississippi Valley Construction Co., 802 Chestnut St., for brick residence, South Drive, Hampton Park; 2 stories and basement, 40x39 ft., cut stone, glazed tile roof, hardwood and terrazzo floors, tile baths, showers, incinerator, elect. refrigerator, oil burner.

Mo., St. Louis—Rebecca Schweiger, care Chas. R. Greene, Archt., Wainwright Bldg., erect brick residence, Watson-Chippewa Park; 2 stories and basement, 26x32 ft., hardwood floors, tile bath, asphalt shingle roof, hot water heat; work by sub-contract.

Mo., St. Louis—M. Taylor, 3117 Watson Rd., soon start work on 3 dwellings, 6520-24 Tholoan Ave. and 6056 Arsenal St.; brick, 2 stories and basement, 26x45 ft., hardwood floors, tile baths, asbestos shingle roofs, hot air heat; H. Hardt, Contr., 3117 Watson Rd.

Mo., St. Louis—Cyrus Crane Willmore Organization, Inc., Boatmen's Bk. Bldg., selected to erect 3 Master Model Homes in St. Louis Hills from plans by John A. Sloane, Francis D. Johnson and Rhee E. Burket, architects; project sponsored by National Home Owners' Institute; Willmore organization owners of St. Louis Hills.

Mo., St. Louis—C. Naert, 3222 Meramec St., erect \$10,000 residence, 3972 Federer

Place; brick, 1 story and basement, 34x30 ft., hardwood floors, tile bath, slate roof, hot water heat; work by sub-contract.

Mo., St. Louis—W. T. Uthoff, 4550 Gibson Ave., erect \$10,000 brick residence, 5515 Rhodes Ave.; 1 story and basement, 28x45 ft., tile bath, hardwood floors, comp. shingle roof, hot water heat; Branner Realty Co., Contr., 5411 Gravois Ave.

Mo., St. Louis—Wallace Herndon Smith has low bid from Dickie Construction Co. for residence, Warsaw Rd.; brick, 2 stories and basement; Smith & Gauger, Archts., all Louderman Bldg. 1-9

Mo., St. Louis—J. Grbicich, 5834 Saloma St., erect \$10,000 residence; brick, 1 story and basement, 25x47 ft., hardwood floors, tile bath, asphalt shingle roof, hot air heat; Geo. B. Willmering, Archt., 2616 N. Kingshighway Blvd.; work by sub-contract.

Mo., St. Louis—J. Birkenmaier, 3928 California Ave., erect \$10,000 residence, 5705 Milentz Ave.; brick, 1 story and basement, 27x45 ft., hardwood floors, tile bath, comp. shingle roof, hot air heat; work by sub-contract.

Mo., St. Louis—Jas. E. Adams, Baden Station, erect \$15,000 residence, 322 Chambers Rd.; frame, 2 stories and basement, 24x32 ft., hardwood floors, tile bath, comp. shingle roof, hot water heat; work by sub-contract.

Mo., St. Louis—P. M. Will, 6266 Marmaduke Ave., erect 2 brick dwellings, 6279-85 Odell Ave.; 1 story and basement, 30x49 ft., tile baths, hardwood floors, comp. shingle roofs, hot air heat; \$20,000; work by sub-contract.

Mo., University City, St. Louis—Adolph Meyer, 7200 Princeton St., erect \$10,000 brick tion, conc. and tile roof, steam heat, oil residence; 2 stories, 37x32.6 ft., stone foundation; W. J. Beattie, Archt., 307 Frisco Bldg.; E. F. Schooley, Contr., 6030 Delmar Blvd.

Mo., University City, St. Louis—C. E. Buford, care Geo. F. Bergfeld Co., Contr., 3832 W. Pine Blvd., erect \$20,000 residence, 7233 Creoling Drive; brick, 2½ stories and basement, hardwood floors, slate roof, tile baths, hot water heat, stone foundation; Nolte & Nauman, Archts., 2383 W. Pine.

Okla., Oklahoma City—John J. Harden, Inc., Petroleum Bldg., plans about 100 dwellings during 1930 in Edgemere Park, Creston Hills, Linwood Place, and Harden's West Twelfth St. Addition; about \$1,000,000; owner builds. 2-13

Okla., Oklahoma City—Callaway, Carey & Foster, Inc., Commerce Exchange Bldg., drawing plans for additional 16 dwellings, Gatewood Ave.; owners build.

Okla., Tulsa—Southwest Homes Corp., Harold E. Stewart, Exec. Vice-Pres., starts work by March 1 on 5 dwellings, Harvard Hills; brick and frame; sell for from \$4400 to \$6000 each; 20 additional dwellings planned.

Tenn., Memphis—R. K. Thompson, 2180 Central Ave., erect brick and stone residence, Central St. near Highland St.; 1½ stories, 46x38 ft., tile bath, hardwood floors, comp. roof; owner builds.

Tenn., Memphis—R. S. Magee, Fidelity Bk. Bldg., erect \$18,000 brick veneer residence, 43 Bellair Woods; 2 stories, 47x36 ft., 2 tile baths, hardwood floors, tile roof, gas heat; owner builds. 12-19

Tenn., Memphis — A. M. Austin, 1107 Linden St., let contract for brick, stucco, timber and field stone residence to Joe Smith, 1392 Wellington St.; 2 stories, 35x87 ft., English type; Polk W. Agee, Archt., Fidelity Bank Bldg. 1-2

Tex., Austin—Elgin Standard Manufacturing Co., erect 2 dwellings, Enfield Addition; \$10,000; brick veneer, 1 story, oak and tile floors; Edwin C. Kreisle, Archt., Scarbrough Bldg.; Claude Traweck, Contr., 701 Highland Ave.

Tex., Baytown—Louis Reidland erect 2-story brick and conc. hotel to replace Reidland Hotel recently burned at loss \$20,000.

Tex., Fort Worth—Ralph R. Carroll, 1216 Pennsylvania St., erect \$15,000 residence, 3328 Ward Pkwy.; brick veneer, 2 stories, 39x44 ft., oak floors, tile baths and roof; J. R. Murphy, Contr., 3202 Cockrell St.

Tex., Fort Worth — J. P. Gordon, 2651 Green St., erect \$10,500 residence, 3521 Bellaire Drive, South; brick veneer, 2 stories, 44x50 ft.; Ben B. Milam, Archt., W. T. Waggoner Bldg.; F. V. Sprowls, Contr., 2233 Hawthorne St.

Tex., Palestine — Ned Morris, Jr., erect Norman-English type residence, Sylvan Ave. and Neches St.; 2 stories; stucco, Oklahoma field stone, brick and half-timber, hardwood floors, brown cement asbestos shingle roof, 2 baths; Wm. Kraus, Jr., Contr.

Tex., San Antonio — A. B. Phelps, 401 Dewey Place, for contract at \$16,429 to J. M. & Morris Oldham, 135 Porter St., for residence; stucco and frame, rein. conc. foundation, 1 and 2 stories; Adams & Adams, Archt., Real Est. Bldg. 1-30

Government and State

Ala., Montgomery — State Dept. of Agriculture alter bldg. for offices; H. I. Flinn, Contr., 1125 S. McDonough St.

Tenn., McMinnville — Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract at \$46,271 to J. P. Foley & Sons, Inc., 80 Boylston St., Boston, Mass., for post office. 1-16

Tenn., Memphis — Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract at \$779,000 to National Construction Co., Inc., Glenn Bldg., Atlanta, Ga., for extension and remodeling of custom house, court house and post office; 3 passenger elevators, Otis Elevator Co., 810 18th St., N. W., Washington, at \$34,634. 2-6

Tex., El Paso — Constructing Quartermaster let contract at \$105,184 to Robt. E. McKee, 1918 Texas St., El Paso, for 16 sets non-commissioned officers' quarters; brick and tile, 1 story, 35.6 x 32.8 ft., tile roofs, oak floors, conc. foundations. 2-6

Va., Clarendon — Arthur C. McMillen, Contr., erect \$80,000 post office and stores bldg., Wilson Blvd. and Wheeler Ave.; stone and conc., 2 stories, 65x125 ft., 3750 sq. ft. floor space; A. F. Thelander, Archt.; work to start upon completion of plans.

Hospitals, Sanitariums, Etc.

La., New Orleans — Orleans Anti-Tuberculosis League, Wm. C. Ermon, Chmn., Bldg. Comm., let contract at \$64,900 to Lionel F. Favret, Louisiana Bldg., for hospital, Gentilly Terrace; frame and stucco, 1 story, 341 x110 ft., 40 ft. wide with courtyard in center, rein. conc. foundation, cement and wood floors, septic tanks, Celotex, asbestos shingle roof; M. B. DePass, Archt., 926 Pauline St. 2-13

Md., Catonsville, Baltimore — M. Solmsom Fly Screen Co., Bayard and Nanticoke Sts., has screen contract for \$400,000 ward bldg., Spring Grove State Hospital; Henry Powell Hopkins and Allan T. Burton, Archts., 347 N. Charles St.; Jas. Posey, Mech. Engr., 201 W. Franklin St.; Davis Construction Co., Contr., 9 W. Chase St., all Baltimore. 2-6

Tenn., Greeneville — Fox Hospital let contract to Pyle Bros., Kingsport, for brick, rein. conc. and stone trim bldg.; 3 stories, 82x30 ft.; Colle & Cardwell, Archts., Johnson City.

Tex., Sanatorium — Capitol Steel & Iron Co., reported, has contract for 100 tons rein. steel for children's hospital and dormitory, State Tuberculosis Sanatorium; Phelps & DeWees, Archts., Gunter Bldg.; W. E. Simpson Co., Engr., Milam Bldg., both San Antonio; Bailey, Burns & Fitzpatrick, Contrs., Mercantile Bldg., Dallas. 2-6

Hotels and Apartments

D. C., Washington — Sumter Brick Works, Sumter, S. C., has contract through United Clay Products Co., Investment Bldg., Washington, for brick for group of apartments being erected and to be erected at 39th and Cathedral Sts. for Westchester Corp., Gustave Ring, Pres., Tower Bldg.; work has started on two 8-story, 100-suite units and two more will be built next year; contract calls for million brick at once, another million next year and next in five years; total cost about \$10,000,000; Harvey Warwick, Archt., Ambassador Hotel Bldg.; Cafritz Construction Co., Gen. Contr., 1402 K St., N. W. 2-13

Fla., Boca Grande — Joseph Spadaro, 446 6th Ave., New York, reported, erect \$250,000, 3-story and basement, 130-room hotel; octagonal shape, 80 ft. in diameter, 4 wings, 50x100 ft., brick, tile roof, steam heat; F. J. Kennard & Son, Archts., 303 Zack St., Tampa; owner builds.

Ga., Atlanta — O. T. Hennessee, 683 Juniper St., N. E., erect two 2-story and basement, brick, stone trim, 12-unit apartments, Somerset Terrace and Ponce de Leon Ave., N. E.; \$75,000; hardwood floors, tiled baths, built-up roofs, steam heat; owner, Archt.-Contr.

Mo., Kansas City — G. H. McCasles & Co., Inc., 400 Victor Bldg., has permit for \$300,000, 10-story, 67-unit apartment hotel, 115-21 Ward Parkway.

Mo., Richmond — A. E. Fugett has contract to erect \$30,000, 2-story, frame 8-apartment; H. A. Stonebraker, Archt., Balcony Bldg., Kansas City.

Mo., St. Louis — A. Brunner, 1911 Montgomery St., erect \$10,000, 2-story, 34x48-ft. brick tenement, 4674-76 Kossuth St.; R. A. Gross, Bldr., 8835 Lawn St.

Okla., Oklahoma City — The Holmboe Construction Co., Petroleum Bldg., Gen. Contr. for \$1,500,000, 15-story, 500-room hotel, Third St. and Broadway, for N. E. Bowden, Pres., Atlas Bond & Mortgage Co., and associates, advises that financing has not yet been consummated, consequently no work undertaken; Layton, Hicks & Forsythe, Archts., Braniff Bldg.; H. P. Craig and associates, Lessee, Tulsa. 7-18

Tex., El Paso — Robert E. McKee, 1900-32 Texas St., Gen. Contr. for \$1,000,000, 350-room hotel for Hilton Hotel Co., C. N. Hilton, Pres., started work and plans to award sub-contracts in week or 10 days. 10-17

Miscellaneous

N. C., Asheville — Philip S. Henry, Zelandia St., started work on \$70,000, 3-story building on slope of Beaucatcher Mountain to house paintings and art relics.

Schools

Ga., Decatur — Following sub-contracts awarded on classroom bldg. at Agnes Scott College for which Williams Construction Co., Red Rock Bldg., Atlanta, has general contract at \$279,420; work started: Rein. steel and metal pans, Truscon Steel Co., Mortgage Guarantee Bldg.; windows, International Casement Co., Inc., Bona Allen Bldg.; sheet metal work, Atlanta Sheet Metal Works, 799 Marietta St.; roofing tile, Beaulieu Co., Mortgage Guarantee Bldg.; limestone and crab orchard stone, Hill R. Huffman Co., Bona Allen Bldg.; tile work, Eubanks Mantel & Tile Co., 507 Peachtree St., N. E.; rubber tile floors, Southern States Insulating Co., Candler Annex; face brick, B. Mifflin Hood Brick Co., 686 Greenwood Ave.; metal bucks and Kalamein doors, Luke Seawell, 144 Spring St.; painting, T. M. Cannon, 229 Marietta St.; glass and glazing, F. J. Coolidge & Sons, 12 Forsyth St.; vault door, Mosler Safe Co., Peachtree Arcade; floor hardener, Master Builders Co.; water-proofing, Par-Lock Southern Appliers, Inc., both Bona Allen Bldg., all Atlanta; orna. iron and struc. steel, Decatur Building & Iron Works, Decatur, Ala.; plumbing and heating, Waldrop Plumbing & Heating Co., Hampton St., Rock Hill, S. C.; electric wiring, Webb Electric Co., Anderson, S. C.; Edwards & Sayward, Archts.; Robert B. Logan, Asso. Archts., both Marietta Bldg., Atlanta; Robert S. Fiske, Consltg. Engr., Healey Bldg., Atlanta. 11-21

Ga., Shellman — Bd. of Education let contract to J. T. Ragan & Co., Vidalia, for 8-classroom and study hall, brick veneer school; asbestos roof, hardwood floors; Dennis & Dennis, Archts., 556 Mulberry St., Macon. 12-19

Md., Annapolis — Anne Arundel County School Bd., George Fox, Supt., started work on repairs to Annapolis High School noted damaged by fire at loss \$25,000.

N. C., Chapel Hill — University of North Carolina, Dr. Harry W. Chase, Pres., start work in about 30 days on \$200,000 auditorium to replace Memorial Hall; probably brick; Arthur C. Nash, University Archt.; Duke Construction Co., Gen. Contr., Charlotte. 2-6

N. C., Greensboro — North Carolina College, Dr. J. I. Foust, Pres., let contract at \$53,300 to R. K. Stewart & Son to remodel administration building; Harry Barton, Archt., College Archt. 2-13

N. C., Winston-Salem — Bd. of School Commrs., Henry Dwire, Chmn., let contract at \$220,000 to Frank L. Blum & Co., 860 W. 4½ St., for 3-story and basement, brick high school, 12th St. and Cameron Ave.; electrical, Ever-Ready Electric Co., N. Trade St.; plumbing, ventilating and heating, Chas. W. Christian; Harold Macklin, Archt., Realty Bldg. 2-6

Okla., Guthrie — Bd. of Education started work, day labor, on \$70,000, 2-story, brick and rein. conc., 12-classroom school to replace Central Grade School; Roy W. Shaw, Archt., Enid. 1-23

Tenn., Chattanooga — Hamilton County Bd. of Education, J. E. Walker, Supt., let contract at \$6898 to Jones & Rozell, First Nat'l Bk. Bldg., for 4-room addition to Apison School; at \$4425 to Henry L. Brown, 706

Manning St., for 2-room addition to Booker T. Washington School; at \$4500 to Fred Varner for 2-room and hall addition to Bakewell School; have plans revised by Ben Hunt for John A. Patten School in Wauhatchie Valley; \$10,000. 12-26

Tex., San Antonio — Bd. of Education, Dr. J. A. McIntosh, Pres., let contract at \$52,880 to Rheiner & Kroeger, 305 Wyoming St., for 2-story, 110x160 ft., brick and rein. conc., 11-room and assembly hall addition to Andrew Briscoe School No. 19; Richard Vander Straten, Archt., Travis Bldg.; Matthews & Kenan, Consltg. Engrs., Smith-Young Tower; Phelps & DeWees, Schools Archts., Gunter Bldg. 2-13

Stores

Ga., Atlanta — Thompson Estate let contract to Barge-Thompson Co., 136 Ellis St., N. E., to remodel building, 59-61 S. Pryor St., N. E.; \$22,000; plans by owner.

Md., Baltimore — Henry Frank Estate expend \$40,000 for alterations to buildings, 315-19 W. Lexington St., for F. W. Grant-Silver Stores, Inc.; Geo. R. Callis, Jr., Archt., Hearst Tower; owner builds.

Miss., Hattiesburg — Joseph Saphie, Jr., 853 Main St., let contract to Oden & Glenn, Carter Bldg., for 60x80 ft. stucco building, E. Pine and Kamper Sts.; Juan G. Landry, Archt., 23rd Ave.; Buler Auto Electric Co., Lessee.

Okla., Tulsa — A. Y. Boswell, 307 S. Main St., soon let contract for 2-story, 36x90-ft., brick, stone and rein. conc. store to be leased to Rossman Bros.; Leland I. Shumway, Archt., Alexander Bldg.

S. C., Greenville — J. W. Norwood, South Carolina Natl. Bk. Bldg., let contract to Morris-McKoy Building Co., Finley Bldg., Greenville, for \$15,000 improvements to 3-story and basement store to be leased to J. C. Penney Co.

Tex., Liberty — N. Waldman erect store; Myers, Knight & Holland, Contrs., American Nat'l Bank Bldg., Beaumont.

Theaters

Fla., Tampa — Victory Theater, Paul Short, Mgr., started work on redecoration and improvements in acoustics; \$20,000.

La., New Iberia — Nahfouz & Elias, Port Arthur, Tex., soon start work on \$30,000 theater; Eugene Guillot, Contr.

Warehouses

Fla., Pensacola — Ingalls Iron Works, Birmingham, Ala., has contract for steel for 60x400 ft., steel and corrugated iron warehouse for Louisville & Nashville R. R. at Goulding Yard for which W. Horace Williams Co., Southern Bldg., New Orleans, La., has general contract. 1-9

Md., Baltimore — Leach & Damesyn, Inc., 3811 Eastern Ave., erect \$20,000, 2-story warehouse, 505 Eaton St.; Fred Keller & Sons, Bldrs., 77 E. Echodale Ave.; A. C. Radziszewski, Archt., 425 S. Ellwood Ave.

Okla., Oklahoma City — Underhill Construction Co., 734 W. Noble Ave., has permit for \$19,000 brick warehouse.

Tex., Houston — Wiley Trammel, 83 Stanley St., started work on \$35,000, 1-story, 250 x75 ft. brick warehouse, Henderson St. and Southern Pacific tracks; 18,750 sq. ft. floor space; to be leased to Martin Wagon Co. of Texas, 2610 Bell Ave.

\$752,000 Bid on Alabama

Polytechnic

Auburn, Ala. — The low base group bid for constructing four buildings here for the Alabama Polytechnic Institute was submitted by W. L. Coston, Bessemer, Ala., at \$752,200, construction to cover a one and two-story and basement shop building; two-story and basement administration building; one-story and basement auditorium, and a two-story and basement textile building. Warren, Knight & Davis, Birmingham, are the architects.

WANT SECTION

THE CLASSIFICATIONS IN THIS SECTION ARE:

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Alternator.—Lamar Ice & Fuel Co., Bennett Skaggs, Lamar, Mo.—Wants prices and data on 220-volt, 3-phase, 60-cycle, 15 to 20-kv-a. alternator, with exciter and switchboard; used equipment preferred.

Battery Charging Equipment.—Bruce Gerdes, Tulla, Tex.—Wants prices and data on battery charging equipment.

Brick Plant Equipment.—Clay Products Co., care W. R. Taylor & Co., Mauresa St., Pensacola, Fla., wants machinery and equipment for brick and tile plant under construction at Barth, including steam shovel, gasoline engine.

Canning Plant Equipment.—R. G. Gresham, Chamber of Commerce, Denison, Tex.—Wants prices and data from manufacturers of canning plant equipment, for small plant.

Dyeing Machines.—Amazon Cotton Mills, Thomasville, N. C.—Wants prices and data on attachments for machines to dye random yarn.

Engine (Gasoline).—See Brick Plant Equipment.

Lime Manufacturing Equipment.—East Quarry Co., Route 1, Glencoe, Ala.—Wants prices and data from manufacturers of modern equipment for manufacturing lime.

Radiator and Fender Shop Equipment.—Bruce Gerdes, Tulla, Tex.—Wants prices and data on hand tools and equipment for repairing radiators, glass cutting and shaping equipment for windshields and equipment for straightening and repairing bent fenders, body metals, etc.

Sawmill Hog.—Dorchester Lumber Co., Badham, S. C.—Wants prices and data on used, Mitts & Merrill No. 16 sawmill hog, good condition.

Textile Printing Machinery.—Russell Mfg. Co., P. O. Box 218, Alexander City, Ala.—Wants prices and data from manufacturers of machines for printing cloth in 1, 2 and 3 colors.

McBryde Gin, New Albany, Miss., wants prices on following, good condition:

- (1) Drag Line—1 yd. or 1 1/4 yd.
- (2) Oil Engine—75 or 100 h. p.

Ed P. Phillips Machinery Co., Ninth and Cary St., Richmond, Va.—Wants prices and data on following used equipment:

- (1) Boiler (Vertical)—40 h. p., for use with steam hoist
- (2) Hoist (Double Drum)—equipped with 40-h. p. boiler, nigger heads and swinging engine for use with stiff leg derrick.

National Equipment Co. (Mchy. Dealer), 400 W. First St., Bloomington, Ind.—Wants prices and data on following:

- (1) Bag Pullers Conveyor—portable, 30-ft. centers.
- (2) Car Pullers (Electric)—2, either 110 or 220 volts
- (3) Cone Crusher—2 ft., Symons, coarse
- (4) Conveyors (Belt)—36 in., heavy duty, 100-ft. centers, complete with idlers and driving mechanism; 20 in., heavy duty, 70-ft. centers complete; 20-in., 80-ft. centers complete
- (5) Crane (Crawler)—1 1/2 yd., clam shell, electric or Diesel, 40-ft. boom
- (6) Elevators (Bucket)—to handle 8-in. rock, 60-ft. centers, 60 tons hourly; to handle 2-in. rock, 60-ft. centers, 60 tons; to handle 1-in. rock, 50-ft. centers, 60 tons
- (7) Jaw Crusher—48x60 in., any make
- (8) Locomotives (Saddle Tank)—5, 40 to 50 ton, steam, 4 wheel.

W. M. Smith & Co. (Mchy. Dealer), Birmingham, Ala.—Wants prices and data on following, used, good condition:

- (1) Bulldozer
- (2) Cranes—1, 15 to 25 ton, 36 to 38-ft. 0-in. span; 2, 25 to 40 ton, 47 to 48-ft. 0-in. span; 1, 25 to 40 ton, 27 to 58-ft. 0-in. span; equipped with 230-volt, d. c. motors, maximum life 40 ft. 3-in.
- (3) Motor-Generator Set—500 kv-a., motor 2300 volts, 3 phase, 60 cycle, generator 230 volts, d. c.

Guyan Machine Shops, Inc., Logan, W. Va.—Wants prices and data on following:

- (1) Grinder—for twist drills up to 2 1/4 in., preferably wet
- (2) Hoists—for I beam, 1 to 3-ton capacity a. c. and d. c., 220 volts
- (3) Lathe—about 20 in. x 16 ft., with taper attachment
- (4) Locomotive (Electric)—6 ton, 48-in. gauge, 250 volts, not over 24 in. high, with cable reel
- (5) Milling Machine—for general repair shops
- (6) Motors—a. c., 220-440 volts, 3 phase, 60 cycle, 5 to 100 h. p.
- (7) Motor-Generator Set—Ridgway, 150 or 200 kw., with 6600 volt, 60 cycle, motor, 250 volt generator
- (8) Punch and Shear—preferably No. 1 1/2 Buffalo Universal Iron Worker
- (9) Rotary Converter—or motor-generator set, 25 cycle, to 250 volts, d. c.
- (10) Squaring or Paper Shear—about 36-in. capacity
- (11) Truck (Motor)—5-ton capacity
- (12) Welding Machine—200 to 300 ampere, gasoline driven.

Miscellaneous

Floor Heater (Radiator).—Roger K. Harlan, 207 Burt Bldg., Dallas, Tex.—Wants prices and data from manufacturers of radiator floor heater similar to Ward heater; individual unit, set in floor, gas, vented, hot air.

Murray Mfg. Co. (Furniture Builders and Lumber Dealers), Catawba, N. C.—Wants prices and data from manufacturers of following:

- (1) Molding—for framing pictures
- (2) Shears—for cutting sheet metal.

Building Material and Equipment

Wilson Co., Charlottesville, Va., wants prices before Feb. 22 on all classes of materials for constructing laundry, garage and officers' quarters at U. S. Veterans Hospital, Coatesville, Pa.; bids to be opened Feb. 25; also wants proposals from sub-contractors on all lines before Feb. 22.

M. Leo Elliott, Archt., Tampa, Fla., wants to communicate with manufacturers of ventilating systems suitable for office buildings.

Guyan Machine Shops, Inc., Logan, W. Va., wants prices on:

Shed (Steel)—or building about 60x60 ft. Kirby & Beard, Contrs., Route No. 5, Jackson, Tenn., want prices on following for dwelling:

Roofing—asbestos shingle.
Herbert L. Cain, Archt., Grace Securities Bldg., Richmond, Va., wants prices on following for Sunday school, Newport News, Va.:

Cast Stone
Flooring—linoleum, tile
Metal Doors
Roofing—slate
Steel Sash and Trim
Wire Glass.

Lockard & Vaughn, Contrs., Meridian, Miss., wants prices on following for \$60,000 courthouse and jail alterations and additions, Greenville, Miss.:

Flooring—terrazzo
Marble.
Maurice E. Kressly, Archt., Smith Bldg., Orlando, Fla., wants prices on following for \$30,000 dwelling, Winter Park, Fla.:

Cast Stone
Flooring—hardwood, tile, composition
Incinerator
Roofing (hip)—tile
Steel Sash and Trim
Tile—hollow.
Chas. M. Schroter, Archt., 1700 Court Square Bldg., Baltimore, Md., wants prices on following for dwelling:

Flooring—hardwood, linoleum, tile
Plaster Board
Roofing—slate.

Tilghman-Moyer Co., Allentown, Pa., wants prices on following for bank bldg., Salisbury, Md.:

Cast Stone
Flooring—linoleum, tile
Marble
Roofing (flat)—built-up
Steel Sash and Trim
Tile—gypsum
Vaults
Brass and Bronze Work.

Will N. Noonan Co., Archt., Builders Exchange Bldg., San Antonio, Tex., wants prices on following for \$60,000 high school, Crystal City, Tex.:

Cast Stone
Flooring—tile
Roofing—built-up
Wire Glass.

Hanker & Cairns, Archts., Court Square Bldg., Memphis, Tenn., want prices on following for bank bldg., Houston, Miss.:

Flooring—hardwood, terrazzo, tile
Marble
Roofing—built-up
Steel Sash and Trim
Vaults
Brass and Bronze Work.

Home Builders Service Co., Contr., 831 Broad St., Chattanooga, Tenn., wants prices on following for \$125,000 dwelling:

Flooring—tile
Limestone
Marble
Roofing—slate
Tile—interior.

Jefferson D. Powell, Archt., Professional Bldg., Jacksonville, Fla., wants prices on following for \$15,000 home for dependent girls near Hogan, South Jacksonville, Fla.:

Cast Stone
Flooring—tile
Roofing—asphalt shingle.

Bids Asked

Boiler.—U. S. Engr. Office, Vicksburg, Miss.—Bids Feb. 24 for upright, submerged-head type marine boiler with oil-burning equipment.

Bridge.—Belzoni, Miss. See Construction News—Bridges, Culverts, Viaducts.

Bridges.—State of Missouri. Bids for 31 bridges. See Construction News—Roads, Streets, Paving.

Bridges.—State of Texas. Bids for 5 bridges. See Construction News—Roads, Streets, Paving.

Bridges.—State of West Virginia. Bids for 5 bridges. See Construction News—Roads, Streets, Paving.

Coal.—U. S. Engr. Office, McCall Bldg., Memphis, Tenn.—Bids Mar. 11 for coal.

Condensing System (Steam Turbine).—Bureau of Standards, Washington, D. C.—Bids Feb. 27 for condensing system for 750-kw. steam turbine.

Conveyors.—Quartermaster, Camp Knox, Ky.—Bids Mar. 1 for outfit consisting of coal unloader and flight conveyor for unloading coal from bottom gondolas and conveying same to stock pile.

Diving Telephone.—U. S. Engr. Office, Huntington, W. Va.—Bids Feb. 27 for diving telephone.

Drainage Ditch.—Bd. of Commrs. of Alexander County Drainage Dist. No. 2, Court Room, Taylorsville, N. C.—Bids Mar. 4 for 4 1/2-mi. ditch.

Dredging Pump.—U. S. Engr. Office, Vicksburg, Miss.—Bids Feb. 28 for dredging pump.

Dredges.—U. S. Engr. Office, Jacksonville—Bids Mar. 3 for lease and operation of 3 hydraulic pipe line dredges in Intracoastal Waterway between St. Johns and Halifax Rivers, Fla.

Dredging.—U. S. Engr. Office, Wilmington, N. C.—Bids Mar. 20 for dredging approx. 480,234 cu. yd., Section IV, Intracoastal Waterway, Beaufort to Cape Fear River, N. C.

Dredging.—U. S. Engr. Office, Galveston, Tex.—Bids Mar. 14 for dredging approx. 2,000,000 cu. yd. from Freeport Harbor.

Elevator (Freight).—Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids Feb. 26 for freight elevator at naval operating base, Hampton Roads, Va.

Elevator Plant.—Treasury Dept., Office of Supervising Archt., Washington, D. C.—Bids Mar. 6 for complete elevator plant in U. S. post office and court house, Dallas, Tex.; Jas. A. Wetmore, Acting Supervising Archt., for specifications.

Fire Engine.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Feb. 26 for fire engine, delivery Quantico, Va.

Forgings, Structural Steel, etc.—U. S. Engr. Office, Huntington, W. Va.—Bids Feb. 28 for forgings, structural steel, etc.

Grader.—See Road Building Equipment.

Graders (Road).—See Road Building Machinery.

Trucks (Motor).—See Road Building Machinery.

Machine Shop Equipment, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Feb. 25 for motor driven universal bench saw; bids Mar. 4 for high speed twist drills, motor driven universal punch and shear, portable hydraulic frame benders, engineers' and socket wrenches.

Miscellaneous.—Panama Canal, Office of General Purchasing Officer, Washington, D. C.—Bids Mar. 1 for following, Sch. 2532:

Electric water coolers, pedestal fountains, soda fountains and back bars.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Feb. 28 for following, Sch. 2533:

Holisting cable, wire rope, copper wire, struc. steel, steel flats, rack castings, car wheels, iron or steel pipe and fittings, seamless brass pipe, snatch blocks, relief valves, etc.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Feb. 26 for following, Sch. 2534:

Galvanized pure iron, copper-bearing iron, or copper-bearing steel roofing sheets.

Morocco.—Government Printing Office, Washington, D. C.—Bids Mar. 3 for 1050 sq. ft. conchoidal morocco, 350 sq. ft. brown morocco, 700 sq. ft. black morocco, 250 sq. ft. blue morocco, 1050 sq. ft. green morocco and 2000 sq. ft. black durable cowhide.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Feb. 27 for following, Sch. 2531:

Polished plate glass, window glass, metal-cutting band saws, pressure and vacuum gages, metal frame goggles, welding glasses, acetylene gas hose, etc.

Paints.—Q. M. Corps, Field Artillery School, Fort Sill, Lawton, Okla.—Bids Feb. 26 for 7000 lb. white lead, 600 gal. paints, colors in oil, turpentine, varnish, shellac, etc.

Paper Boxes, Paper, etc.—Treasury Dept., Bureau of Engraving and Printing, Washington, D. C.—Bids Mar. 24 for paper boxes, paper box blanks and paper, during fiscal year beginning July 1, 1930.

Pipe (Terra Cotta).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Feb. 24 for 4000 ft. terra cotta pipe, delivery Quantico, Va.

Pipe (Cast Iron).—See Sewer System.

Pipe (Vitrified).—See Sewer System.

Pipe (Water).—See Water Works.

Pumping Equipment (Air Lift).—See Water Works.

Pumps.—See Water Works.

Reservoir.—See Water Works.

Riveter and Timber Sizer.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Mar. 4 for portable pneumatic yoke riveter, motor driven, four sided timber sizer.

Road Maintainer.—W. F. Turner, Falls County Auditor, Marlin, Tex. Bids March 1, for one power road maintainer.

Roads.—State of Louisiana. Bids for 2 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Maryland—Bids for 6 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Missouri. Bids for 26 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Texas. Bids for 5 roads. See Construction News—Roads, Streets, Paving.

Road Building Equipment.—Comms. Court of Washington County, Brenham, Tex.—Bids Mar. 10 for 60-h. p. tractor, 30-h. p. tractor, 8-ft. grader, 12-ft. grader.

Road Building Machinery.—State Highway Bd. of Georgia, East Point, Ga.—Bids Mar. 6 for 1 10-ton crawler type tractor; 48 5-ton crawler type tractors; 2 2-ton crawler type tractors; 3 heavy duty 1-man power graders with 12-ft. moldboards, scarifiers and crawler type tread; 2 light duty 1-man power graders with 12-ft. moldboards, scarifiers and crawler type tread; as alternate on 5 power graders quote same specifications except with wheel type instead of crawler type tread; 101 1 to 1½-ton trucks with enclosed cabs and steel gravity dump bodies; 61 8-ft. road graders, tractor hitch; 18 10-ft. road graders, tractor hitch; 1 12-ft. road grader, tractor hitch; 26 8-ft., 3-blade road drags; 20 8-ft., 2-blade road drags; 4 5-ton, 3-wheel gasoline road rollers; 5 110-gal. capacity, oil burning tar heaters, equipped with hand spraying attachments and 5 high speed mowing machines, equipped with truck or tractor hitch.

Road Rollers.—See Road Building Machinery.

Roads.—State Highway Comn., Dover, Del. Bids March 11 for 5 roads: Cont. 133—2.65 mi. Whitehall Neck road, 8,000 cu. yd. excavation and borrow, 3,800 tons br. stone base course; Cont. 134—4.31 mi. Thompsonville-South Bowers Beach road, 13,000 cu. yd. excavation and borrow, 1,200 tons br. stone base course, 4,600 tons bro. slag base course; 5,000 lin. ft. wood shoulder curb; Cont. 146—3.07 mi. Masten's Corner-Hollandville, 9,500 cu. yd. excavation and borrow, 3,160 cu. yd. conc. pavements; 3,500 lb. reinforcement; Cont. 67—4 mi. Elliott's Crossing Elimination, Bridgeville, 500 tons cinder base course, 1,300 cu. yd. excavation; Cont. 160—9 mi. from Bridgeville Police Station to Baker's Corner, 4,000 cu. yd. excavation and borrow.

Roads.—State of West Virginia. Bids for 17 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Oklahoma. Bids for 13 roads. See Construction News—Roads, Streets, Paving.

Road.—Forest, Miss. See Construction News—Roads, Streets, Paving.

Saw (Cut-Off).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Feb. 25 for cut-off saw (table saw), delivery Quantico, Va.

Sewage Disposal Plant.—City of Brownwood, Tex., O. W. McDonald, Mayor—Bids Feb. 24 for furnishing material, equipment and labor for construction of sewage disposal plant; Hasie Engineering Co., Inc., 310 Burt Bldg., Dallas, Engr.

Sewer Construction.—Bd. of Public Service, St. Louis, Mo., E. R. Kinsey, Pres.—Bids March 4 for Letting No. 3909, constructing Biddle St. Public Relief sewer; rein. conc. in open cut, 11 ft. horseshoe section, 110 ft. long, and in tunnel 11 ft. plain conc. horseshoe section, 4100 ft. long, with 3 shafts and open cut connections for existing sewer; W. W. Horner, Ch. Engr. Sewers and Paving.

Sewer Construction.—Comms. of Sewerage, 400 M. E. Taylor Bldg., Louisville, Ky.—Bids Feb. 27 for Western Parkway sewer; W. M. Caye, Tech. Engr., 400 M. E. Taylor Bldg.

Sewer System.—City of Lewisville, Ark.—Bids Feb. 28 for material labor and construction sewer system; work includes following. Sanitary Sewer System, trenching and backfilling, 13,327 ft. of 8-in., 5665 ft. of 10-in., and 1010 ft. of 12-in. vit sewer pipe; Y branches and 60 ft. of 12-in. c. i. pipe; 44 manholes and 16 flush tanks complete; service connections 2650 ft. ¾-in. c. i. pipe; disposal plant, Imhoff tank, dosing chamber, filters, inlet, etc., plans, etc. at office of Comms., B. C. McKennon, 276 Wall St., Shreveport, La., R. G. Scott, Magnolia, Ark., and at office of E. T. Archer & Co., Engrs., New England Bldg., Kansas City, Mo.

Sewerage System.—North Carolina State Hospital, Raleigh, N. C., Dr. Albert Anderson, Supt.—Bids Feb. 28 for 1½ mile of 8-in. terra cotta sanitary sewer line.

Shade Cloth.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Feb. 26 for 500 yd. shade cloth, delivery Quantico, Va.

Shovel (Steam).—See Brick Plant Equipment.

Steel Castings.—U. S. Engr. Office, Huntington, W. Va.—Bids Feb. 28 for steel castings.

Street.—Biloxi, Miss. See Construction News—Roads, Streets, Paving.

Street.—Louisville, Miss. See Construction News—Roads, Streets, Paving.

Street.—San Antonio, Tex. See Construction News—Roads, Streets, Paving.

Submarine Cable (Armored), etc.—U. S. Engr. Office, Huntington, W. Va.—Bids Feb. 26 for armored submarine cable.

Tank and Tower.—See Water Works.

Tar Heaters.—See Road Building Machinery.

Timber (White Oak).—U. S. Engr. Office, Huntington, W. Va.—Bids Mar. 1 for white oak timber.

Tractor.—See Road Building Equipment.

Truck (Motor).—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Feb. 25 for motor truck to navy recruiting station, Dallas, Tex.

Trucks (Motor).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Feb. 25 for 6 1-ton trucks, delivery Philadelphia, Pa.

Turbo-Generator.—U. S. Engr. Office, Huntington, W. Va.—Bids Feb. 26 for turbo-generator, for U. S. towboat Merrill.

Wall Board and Snatch Blocks.—U. S. Engr. Office, Huntington, W. Va.—Bids Mar. 1 for wall board and snatch blocks.

Water Mains.—W. C. Trotter, Sec., Mississippi Bldg. Comsn., New State Capitol Bldg., Jackson, Miss.—Bids March 6 for water mains at farm group at Mississippi School and Colony for Feebleminded, Ellisville; plans, etc., from C. H. Lindsley, Archt., Jackson Tower Bldg., Jackson.

Water Wells.—City of Bruceton, Tenn., O. L. Reed, Recorder—Bids Feb. 24 for furnishing material and labor for installing and testing drilled well; V. V. Long & Co., Consult. Engrs., 420 Bennie Dillon Bldg., Nashville.

Water Works.—City of Lewisville, Ark., E. T. Archer & Co., Consult. Engrs., New England Bldg., Kansas City, Mo.—Bids Feb. 28 for water works system; work includes 100 ft. of 8-in., 4152 ft. 6-in., 12,382 ft. of 4-in. and 780 ft. of 2-in., c. i. pipe water mains furnished and laid; 27 fire hydrants, gate valves; 75,000 gal. tank on 125 ft. tower complete with foundations; 360 ft. gravel well, 8¼-in. and 12¼-in. casings; air lift pumping equipment; 250 g. p. m. deep well centrifugal pump and pump house; 50,000 gal. reservoir and pump house; 250 g. p. m. horizontal centrifugal pump; plans etc., at office of engineers, Comms. office and office of B. C. McKennon, 276 Wall St., Shreveport, La., R. C. Scott, Magnolia, Ark.

Trade Literature

Oklahoma City Progress.—Literature recently issued by the Chamber of Commerce of Oklahoma City, Okla., includes the 1929 Production Sheet, a brief summary of chief accomplishments of the Chamber during the past year, with a statement of plans and projects contemplated in 1930.

Motor Control.—"Practical Pointers on the Selection of Motor Control" is the title of a publication issued by Cutler-Hammer, Inc., Milwaukee, Wis., manufacturers of electric control apparatus. The booklet stresses particular features to consider when selecting motor control for direct or alternating current motors.

Concrete Floors.—The Concrete Reinforcing Steel Institute, Chicago, is distributing a booklet on Reinforced Concrete Floors for Residences, presenting tables and data on construction of various types of concrete floors, including solid slab floors, the ribbed type, and tile and joist reinforced concrete floors, with an article on concrete floor finishes. Simplified Practice Recommendation R87-29, issued by the Department of Commerce, shows standard depths and widths adopted by the industry for removable and permanent forms, pans or domes made of wood, steel or other material used in concrete ribbed floor construction.

Georgia Manufacturing.—The Industrial Department of the Georgia Power Company, Atlanta, is distributing a bound report covering a survey of manufacturing locations in Georgia offering certain advantages in the manufacture of furniture and fixtures, particularly for distribution to Southeastern markets. Georgia's resources of timber suitable for furniture manufacture and its strategic location with reference to the nation's markets are among advantages outlined in the survey.

Perforated Metals.—A circular issued by the Nortmann-Duffke Co., Milwaukee, Wis., shows a number of perforated metal products of the company, including a conveyor liner for oil mill work, a perforated screen and a machine guard. The company operates a large variety of dies, enabling it to supply perforated metal for practically all purposes. Its N-D guard metal is made to meet all law requirements and to comply with insurance standards, beside being permanent and easy to form.

Wire Rope.—The Hercules Record, a publication of A. Leschen & Sons Rope Company, St. Louis, Mo., in its February edition presents details of several interesting operations in which Leschen products play important parts. The Putnam Lumber Company, operating mills at Shamrock and Glenwood, Fla., is said to have standardized on Hercules Red Strand wire rope made by the Leschen company and its operations are described and illustrated in the publication.

Concrete Blocks.—In the wide diversity of construction projects in the South and Southwest there is often need for modern structures that will meet present day conditions calling for better buildings at lower costs. To that end, the Blystone Manufacturing Co., Cambridge Springs, Pa., announces a machine that will make 100,000 concrete blocks with a labor cost of only \$1000 and will supply detailed information on how to make 8x8x16 blocks with only 1c labor cost per block.

Small Water Turbines.—Small water turbines of the reaction, inward flow or vortex type are described and illustrated in catalog E1132, issued by the De Laval Steam Turbine Company, Trenton, N. J. The turbines are equipped with either fixed or movable guide vanes and with suitable governors, and are adapted to driving small electrical generators, centrifugal pumps, or for gear, belt or rope drive, as in small lighting plants or in small mills and factories.

Road Machinery.—The Shunk Manufacturing Company, Bucyrus, Ohio, is distributing a folder which comprehensively describes and illustrates the Success maintainer, a machine for road maintenance, which is described as of most rigid construction and offering numerous and flexible blade positions for the lightest or heaviest work. The company is also distributing a folder on the Shunk traffic lane markers.

Pump Units.—Two recent bulletins of the Domestic Engine & Pump Company, Shippensburg, Pa., offer some new and advance types of their equipment. Special features include ball bearings and automatic priming; also, a larger type of pumping unit they have developed and which will apply especially to industrial needs as against the needs of contractors.

Ventilating Awning.—The J. G. Wilson Corporation, New York, is distributing a folder illustrating the Wilson type No. 8 aluminum ventilating awning. This is an all-metal, fire-proof awning made for permanent protection.

Roller Bearing Shovels.—Bulletin No. 301 is being distributed by the Ohio Power Shovel Company, Lima, Ohio, a division of the Lima Locomotive Works, Inc., illustrating and describing the Lima "101" shovel, dragline, cranes and drag shovel, and detailing many of the outstanding features of this machine, which is among the fastest of its size, while its oversize and unity type construction assure long life.

Central Florida.—A booklet, "Central Florida," has been issued by the Department of Agriculture, Tallahassee; it is one of a series of three books compiled and issued by the Department dealing with resources and development of the state. The other two books of the series—North and Northwest Florida and South Florida—may be obtained also from the Department.

Carbon Circuit Breakers.—The Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has published an illustrated, 20-page circular, 1705-B, on type CL carbon circuit breakers, emphasizing new and improved features. Installation photographs show the breakers in a coast guard cutter, steel mill and office buildings, while other photographs present construction details.

Door Hangers, Etc.—The Richards-Wilcox Manufacturing Company, Aurora, Ill., manufacturers of door hangers and hardware specialties, has featured its 50th anniversary in the February number of its house organ, Door-Ways. Interesting details show not only the successive steps in the growth and development of the Richards-Wilcox organization, but disclose the steps by which doorways have attained their modern convenience, beauty and utility.

Simplified Practice for Lumber.—The Division of Simplified Practice of the Bureau of Standards, Department of Commerce, has published a booklet on the revised simplified practice recommendation for lumber. Approximately 200 illustrations in perspective of American standard moldings feature the edition, showing true cross-sections drawn to actual scale. The booklet may be obtained from the Government Printing Office, Washington, D. C., at 30 cents a copy.

Sewage Treatment Tests.—Bulletin No. 198, issued by the Engineering Experiment Station of the University of Illinois, Urbana, details the results of tests on sewage treatment.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Standardization of Steel Joists.

Members of the Steel Joist Institute, Detroit, Mich., have adopted a standard loading table to simplify design and benefit the architectural profession generally. All open web steel joists having depths of from 8 to 16 inches shall conform to standards and, while joist produced by different manufacturers will vary in details of design, they will have a resisting moment and end reaction not less than those shown in the standard loading table. Members of the Institute include: Bates Expanded Steel Truss Co., East Chicago, Ind.; Berger Manufacturing Co., Canton, Ohio; Concrete Steel Co., New York; Gabriel Steel Co., Detroit; Genfire Steel Co., Youngstown, Ohio; Ingalls Steel Products Co., Birmingham, Ala.; Kalman Steel Co., Chicago; McClintic-Marshall Co., Philadelphia; the Macomber Steel Co., Canton, Ohio, and the Truscon Steel Co., Youngstown, Ohio.

Hand Lift Trucks and Skid Platforms.

The Yale & Towne Manufacturing Company, Stamford, Conn., which recently acquired the Stuebing-Cowan Company, Cincinnati, Ohio, announces the addition of the Stuebing hand lift truck manufacturing division to its Philadelphia branch. A 4-story concrete building has been equipped with modern machinery for manufacture and assembly of the company's complete line of Stuebing hand lift trucks and skid platforms. The sale and service of Yale electric industrial trucks will also be handled from this branch, covering Eastern Pennsylvania, Southern New Jersey, Delaware and Maryland.

Safety in Ladder Work.

Built around the idea that ladder work could be made safe, the Dayton Safety Ladder Company, Cincinnati, Ohio, has developed what it describes as "the new riskless ladder" for superior service. It is sold under the trade name "Safety."

Bay City Sales Managers.

The Bay City Shovels, Inc., Bay City, Mich., announce the following additions to the personnel of their sales department: C. C. Johnson, Marion, Ind., formerly with the Osgood company, to be district sales manager in charge of Indiana and Ohio territory; C. H. Collier, Dallas, to be sales manager for Texas, and R. D. Aldrich, formerly of Chicago, to be located at the factory office as agency sales manager in charge of distributors in the Central district. The Eastern Contractors Equipment Co., Frederick, Md., will serve as Bay City distributors in Maryland. Morgan Ramsay is sales manager of the company.

Birmingham Manager for Stephens-Adamson.

The Stephens-Adamson Manufacturing Co., Aurora, Ill., has appointed H. W. Newton as manager of the Birmingham, Ala., branch, with offices in the Martin Building. Mr. Newton has been associated with the Stephens-Adamson organization for several years as designing engineer and is familiar with the company's line of conveying, screening and transmission equipment.

Cutler-Hammer Sales Office.

The Detroit district sales office of Cutler-Hammer, Inc., Milwaukee, Wis., is now located at 2755 East Grand Boulevard, Detroit, Mich., facilities including a warehouse where stocks of standard C-H motor control, wiring devices, safety switches and other Cutler-Hammer products will be carried for immediate delivery.

Refrigerator Shipments Gain.

Kelvinator shipments for the first four months of the fiscal year ending January 31, 1930, show an increase of 53 per cent over the same period of 1929, according to H. W. Burritt, vice-president in charge of sales of the Kelvinator Corporation, Detroit, Mich.

Bridge Company Locates in West Virginia.

The Luten Bridge Company, Inc., York, Pa., engaged in construction of reinforced concrete bridges since 1908, has located at Clarksburg, W. Va. The company has built a large number of bridges in various sections of the country, many of these in the South, particularly Florida, the causeway bridge at Clearwater, Fla., being among its largest Southern jobs. Officers of the company include: A. B. Whitaker, president; H. N. Kirkman, vice-president; G. A. Whitaker, treasurer, and John C. Burger, secretary.

Whiting Exhibit at Exposition.

The exhibit of the Whiting Corporation, Harvey, Ill., at the forthcoming National Industrial Equipment Exposition to be held in Chicago from March 3-7, will be on two distinct lines, cranes and stokers. The Whiting Tiger crane, a trolley of which will be exhibited, is described and illustrated in bulletin No. 1188, while the Whiting stoker, formerly the King Coal stoker, to be displayed by the Harrington Division of the Whiting Corporation, is described and illustrated in a folder now being distributed.

Code of Ethics of Cement Institute.

The Cement Institute, organized to promote the interests of the cement industry by collecting through voluntary action information regarding trade and commerce and disseminating such information among its members, has established general offices at 11 East 44th street, New York. A code of ethics covering standardization of cement, standardization of sales contact, price discrimination, etc., has been adopted.

Sales Manager of Hyatt Company.

H. K. Porter, recently appointed general sales manager of the Hyatt Roller Bearing Company, Newark, N. J., was born in Atlanta and educated at the Alabama Polytechnic Institute, Auburn. He became a member of the industrial sales department of the Hyatt company in 1916 and has since served the company in various capacities.

Resigns as General Manager.

R. G. Richmond, for 25 years in executive and sales development work for the Waterbury Company, New York, manufacturers of cordage, and until recently of wire rope, announces his resignation as general manager of the company. Active in association work for many years, Mr. Richmond represented the Waterbury Company in the Wire Rope Association, the Cordage Manufacturers Association and in the Rubber Covered Wire Association.

U-Tube Boilers.

Following its recent purchase of the business of the Monitor Bi-Loop Radiator Company, Lancaster, Pa., the Lancaster Iron Works, Inc., also of Lancaster, are now manufacturing the Monitor u-tube boilers, on the market since 1888. It is the purpose of the Lancaster works to modernize this line, designed for buildings of various kinds. The boiler is described and illustrated in a bulletin issued by the company.

District Manager of Commerce Department.

William L. Mitchell of Newark, N. J., has been appointed district manager at Norfolk, Va., of the United States Department of Commerce. Mr. Mitchell goes to Norfolk from the Louisville office of the Department, after having served in New York and Washington.

Opens Southern Offices.

The American Appraisal Company, Milwaukee, Wis., has opened offices in Charlotte, N. C., and Chattanooga, Tenn., the former to be located at 818 Johnston Building, with Oscar E. Hansen in charge, and the latter at 319 First National Bank Building, with John E. Dover in charge.

Dyeing Machines for Maine Cotton Mill.

The Gaston County Dyeing Machine Company, Stanley, N. C., has closed a contract with the Pepperell Manufacturing Company for two additional kiers with package containers to be installed in the Pepperell textile mill at Biddeford, Me.

Atkins Twenty-Year Club Banquet.

The banquet of the Atkins "Twenty-Year Club," given recently by E. C. Atkins & Company, Indianapolis, Ind., was the twenty-fourth repetition of what is an important annual ceremony of the Atkins organization. Organized in 1906 with 62 members who had been with the company for 20 years or more, the club now has an enrollment of 231. Its members are scattered over foreign lands, but attendance was almost perfect, including nearly all of the 43 remaining charter members. Four men, Charles F. Aumann, Charles Fenton, William Patterson and William Brennan, had a combined service total of 221 years, their individual records being 60, 57, 53 and 51 years, respectively. An important feature of the annual banquet is the initiation of new members, 28 neophytes being taken in this year. The showing of this famous old club, its growth and the pride of membership felt by those who have served the requisite number of years, is a rare testimonial to some intangible but very potent factor in the atmosphere of Atkins plant and office forces.

DeLavaud Pipe Thickness and Weight.

Contrary to the apparent general belief that deLavaud pipe is manufactured only in thickness and weights prescribed in United States government specifications, the United States Pipe & Foundry Company, Burlington, N. J., announces that it is making and furnishing this product in strict accordance to the thicknesses and weights of the American Water Works Association and American Gas Association specifications. It is also equipped to manufacture any thickness or weight which may be required and invites a consultation with its engineering force on any special installations.

Westinghouse Engineering Manager.

The Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., announces the appointment of Charles MacL. Moss as manager of the Engineering Department of the South Bend (Indiana) Works. Mr. Moss has served the Westinghouse company since 1902.

International Air Show Under Way at St. Louis

St. Louis, Mo.—With craft of virtually every airplane manufacturer in the country on exhibit, one of the greatest world's air fairs in the history of the industry opened in St. Louis on February 15. More than 150,000 persons are expected to visit the mammoth St. Louis Arena during the nine days of the International Aircraft Exposition, which will close on February 23.

At least 20 more airplanes are on exhibition at the St. Louis show than were displayed at the Cleveland show last year or the Chicago Exposition in 1928. The value of planes, motors and accessories on display is estimated at \$2,500,000. The exposition is being sponsored by the Aeronautical Chamber of Commerce of America.

The first plane to enter the huge structure in which the show is being held was the Curtiss Tanager biplane, winner of the \$100,000 Guggenheim safe aircraft competition and, according to its makers, the harbinger of a new era in flying.

Another early arrival was the Keystone-Loening Commuter, an amphibian machine for which an especially designated pond has been prepared on the Arena floor.

One of the principal nightly features at the show is the presentation of "Wings of 1930." The production carries a cast of 150 persons and is presented each night, following a 15-minute "Pageant of Transportation." Virtually every type of traveling facility, from the Roman chariot to the latest type of automobile is included in the pageant.

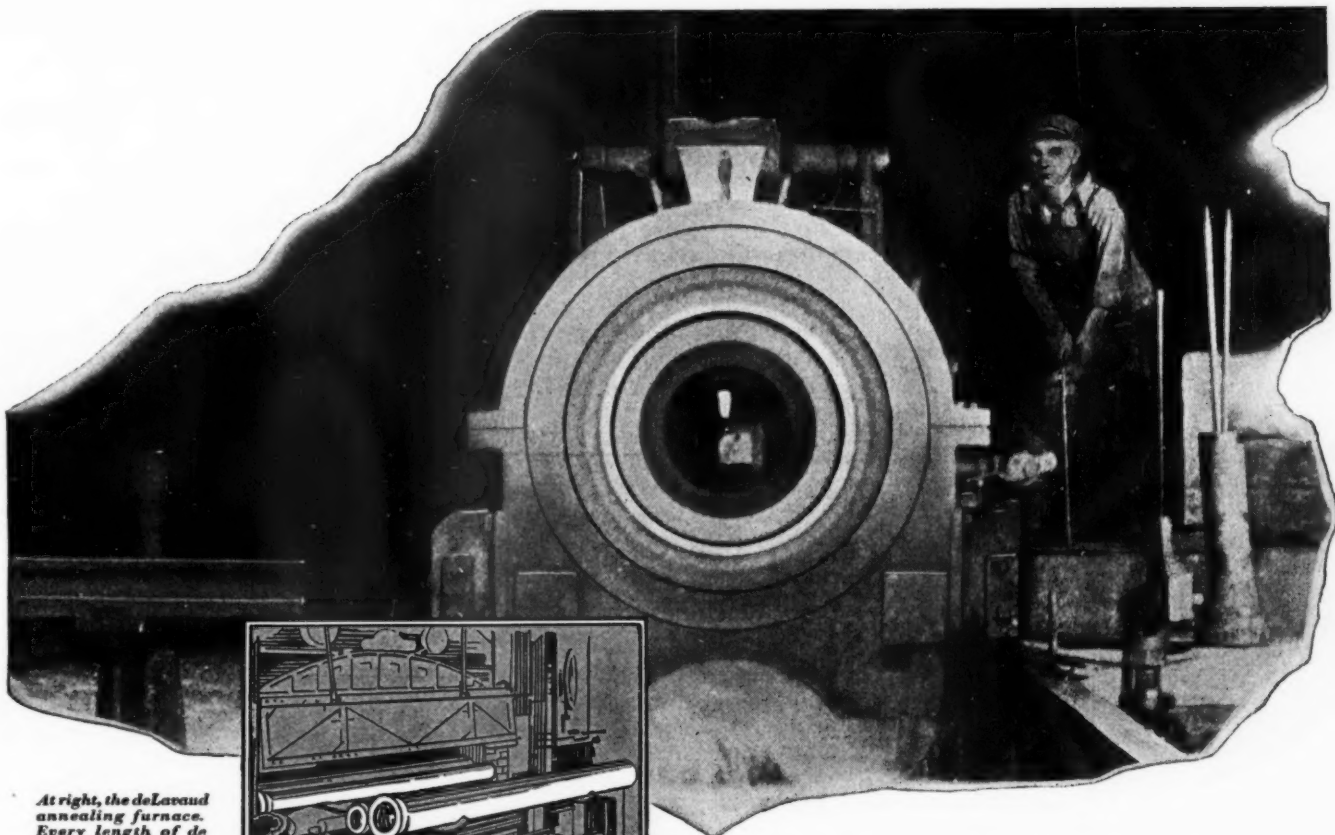
Plan Two Rail Extensions

Grand Saline, Tex.—The Texas Shortline, controlled by the Texas & Pacific Company, has applied to the Interstate Commerce Commission for authority to build an 11-mile line from Grand Saline to Van into a new oil territory recently opened in that section, while the St. Louis Southwestern Railway Company has requested authority to build a 17-mile line from Van Junction to Van.

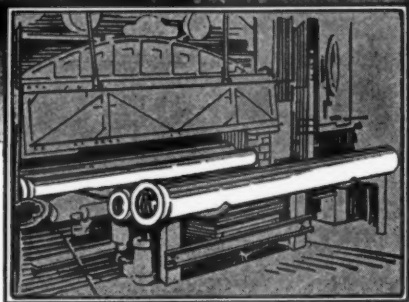
To Build \$3,500,000 School

St. Louis, Mo.—Bids will probably be received in March for constructing the first unit of the \$3,500,000 Herbert S. Hadley Vocational School on the enlarged site of the old Central High School here. This unit is designed for shops, laboratories and classrooms and will cost about \$2,000,000 including a new power house for the entire project to cost about \$150,000. Upon completion of the first unit the Board of Education is expected to begin the erection of the remaining unit at a cost of \$1,500,000. William B. Ittner, Inc., St. Louis, is the architect for the building.

The Alabama, Mississippi, Louisiana Division of the Southern Textile Association, D. Singleton Cook, chairman, will meet for a one day session at Montgomery, Ala., February 28. The meeting will be held at the Chamber of Commerce Auditorium. Topics for discussion will include carding and spinning problems.



At right, the deLavaud annealing furnace. Every length of deLavaud pipe is placed in such a furnace where controlled heat uniformly anneals the entire length.



Above is a deLavaud machine in action. The tilting ladle shown in the background holds the amount of iron to form one pipe.

Sturdy, Flexible deLavaud pipe is always uniform in thickness

No chance of deLavaud pipe being "sided." A physical law assures the uniform thickness of the pipe walls. deLavaud pipe is made by pouring molten iron into a rapidly revolving cylindrical metal mold. The revolving action holds the iron against the mold with a force which at all points is equal to 40 times the force of gravity.

Immediately after coming from the machines, every length of deLavaud pipe is annealed in an oven where temperatures are accurately controlled. This controlled annealing is responsible for the flexibility of the pipe metal. It is the reason why

deLavaud pipe is free from casting strains and is so satisfactory to cut and tap.

And, when it comes to strength, exhaustive tests by authoritative laboratories have proved that deLavaud pipe will stand 25% more pressure than any other cast iron pipe of equal thickness.

deLavaud pipe is manufactured in accordance with U. S. government specifications. We are also making and furnishing this product in the various thicknesses and weights shown in the specifications of the American Water Works Association and the American Gas Association. Write for complete information.

United States Pipe and Foundry Co., Burlington, N.J.

Sales Offices:
New York

Philadelphia
Pittsburgh

Cleveland
Buffalo
Chicago

Our pipe bears the "Q-Check" trademark of The Cast Iron Pipe Research Association

Dallas
Birmingham
Kansas City

Minneapolis
Seattle

San Francisco
Los Angeles

Buys Birmingham Steel Plant

Birmingham, Ala.—The Chicago Bridge & Iron Works, Chicago, Ill., with an export branch in New York, have purchased the plant at Birmingham, Ala., of the Reeves Brothers Company. The purchase covers manufacturing buildings and equipment and a 40-acre tract of land. At present the plant is equipped to handle agitators, absorbers, bubble towers, condenser boxes and crude stills for refineries, cylindrical riveted tanks and tank cars, blast furnaces, galvanizing kettles, steel mill ladles, vertical kilns, creosoting kilns, coke ovens and other products, and in addition will soon be equipped to manufacture the general products of the Chicago Bridge & Iron Works, which consist of elevated tanks, oil storage tanks, smokestacks, gasholders, penstocks, Wiggins roofs and some general plate products. Extensive improvements are planned for the Birmingham plant, but definite information regarding machinery to be installed is not yet available. The capacity of the plant is 50,000 tons annually.

Organized in 1889, the Chicago Bridge & Iron Works operated a plant in Chicago until 1910, when a plant was established at Greenville, Pa., in the Pittsburgh district, to serve the eastern portion of the United States. In 1913 a Canadian subsidiary, the Horton Steel Works, Limited, was organized with a plant at Bridgeburg, Ont. The Birmingham plant will enable the company to serve Southern customers more promptly than has heretofore been possible and will give it additional facilities for export work. Water shipments for the Pacific coast may also be handled more promptly from Birmingham than from the Chicago or Greenville plant. E. E. Michaels, Woodlawn Station, Birmingham, is the general manager of the new plant.

Feldspar Mining Operations on Large Scale

Toecane, N. C.—To meet the demand for its ground feldspar, the Southern Feldspar Company is operating its mill here day and night, having contracted with a pottery for the shipment of two 50-ton cars each week of the current year. In addition to this order, the mill has orders from other potteries and is at present shipping six carloads weekly of high grade potash feldspar for making glass and pottery. The company recently leased the Staggerfork mines on Cane Creek Mountain, near Hawk, N. C., and is operating them. A hard-surfaced road has been built to the mines and an Ingersoll-Rand air compressor capable of driving six Jackhammers at one time, has been installed at the foot of the mountain. The deposit of feldspar is said to

be among the largest in America and the company plans to operate at six different points on the large vein, employing 50 men in the mines and using 8 trucks to haul the feldspar to the mill here, a distance of 8 miles.

Acquires Kentucky Oil and Gas Properties

Louisville, Ky.—The Missouri-Kansas Pipe Line Company, Frank P. Parish, president, Kansas City, Mo., has purchased the Wood Oil Company of Kentucky, Louisville, which has approximately 800 wells on its leases and about 1,000,000 feet of gathering lines under its control. It is producing at this time about 1000 barrels of oil daily and in addition controls an open gas flow of 20,000,000 cubic feet daily and has considerable oil and gas reserves on its properties. The company owns leasehold rights on 52,000 acres of land in various oil and gas producing areas of Kentucky. Plants and equipment, representing a cost of \$900,000, consist of pump stations, power equipment and other machinery. Close proximity of the Wood properties to markets served by the Missouri-Kansas Pipe Line Company will give the latter a well-rounded unit for the production, transportation and distribution of natural gas throughout northwestern Kentucky and southern Indiana, according to Mr. Parish.

\$3,700,000 School Program

San Antonio, Tex.—Work under way on 16 elementary schools here, which will add 159 rooms to present facilities, will cost upward of \$1,000,000, while additions to two other elementary schools, for which contracts are soon to be awarded, and improvements to seven others, for which plans are being made, involve a big total expenditure. Preliminary work on a junior school program which tentatively includes the erection of a building for negroes and one to serve the northwestern section of the city, is under way, although costs have not been estimated. The largest project in the program covers the construction of a senior high school on the Spanish Acres tract, to accommodate 2,000 students, for which Adams & Adams, local architects, are preparing plans. The cost of the building will be in excess of \$900,000, according to Dr. J. A. McIntosh, president of the school board, and working drawings are expected to be completed within 90 days. Work on all elementary schools should be complete by next September, while the senior school will not be ready probably before the second term of next year. Phelps & Dewees are the architects for the school board. Funds were provided by a \$3,700,000 bond issue last summer.

150,000-HORSEPOWER PLANT IN OPERATION

Duke Power Company Completes River Bend Station to Meet Power Requirements

The Duke Power Company, Charlotte, N. C., announces placing in operation the new 150,000-horsepower steam generating station at River Bend, N. C., on the Catawba River, one of the largest steam plants in the South. This plant increases by approximately one-sixth the facilities of the company, bringing its total output to 1,103,000 horsepower. Enlarged capacity of the Duke power facilities has been brought about because of the phenomenal growth of the Piedmont Carolinas. Territory served by the company embraces the largest textile center in the United States and ranks second to Grand Rapids, Mich., in the manufacture of furniture. Between 500 and 600 textile mills in the area operate upward of 12,000,000 spindles, a large proportion of the power requirements being supplied by the Duke company. An average of more than two new industrial plants a week was established in the territory during 1929, it is estimated.

De Luxe Train Service Norfolk to Cleveland

Richmond, Va.—New through de luxe train service between Cleveland, Detroit, Toledo, Columbus, Ashland, White Sulphur Springs, Hot Springs, Charlottesville, Richmond, Newport News and Norfolk will be inaugurated by the Chesapeake and Ohio Railway on March 30. The new train, in addition to giving direct through service, will cut several hours from the fastest schedules now prevailing between these two sections. Equipment for the train will include the most modern Pullmans, with observation and lounge in which radios will be installed, compartments and drawing rooms, new lounge diners and especially built coach salons with individual seats without Pullman fare. Inauguration of the service is the result of the recent acquisition of the Chesapeake and Hocking Valley Railway Company by the Chesapeake and Ohio System, by which the latter gets direct entry over its own lines into Columbus, and thence over the Hocking Valley Railway, which it also controls, into Toledo and over its Pere Marquette lines into Detroit. Through service into Cleveland will be made with connecting trains on the Nickel Plate.

The City of Norfolk, Va., opens bids February 28 for the purchase of \$1,100,000 4½ per cent general improvement bonds.

465,000 square feet of BARRETT SPECIFICATION ROOFS



465,000 square feet of Barrett Specification Roofs protect sixteen buildings of the Cannon Manufacturing Company, Kannapolis, N. C. Roofing Contractor: G. G. Ray & Company, Charlotte, N. C.

SINCE 1921, Barrett Specification Roofs totaling 465,000 sq. ft. of area have been applied on sixteen buildings of the Cannon Manufacturing Company, Kannapolis, N. C., largest manufacturer of towels in the world.

A roll call of American industry would find few famous names missing from the list of those who have repeatedly and consistently evidenced their preference for Barrett Specification protection. Repeat sales to such discriminating buyers constitute both evidence and proof of the unmatched value represented by this world-famous roof.

Architects and engineers generally are familiar with the thoroughly authenticated

records of roofs of Barrett Coal-tar Pitch and Felt and gravel, which have remained weather-proof and fire-safe 40, 50—even 60—years without once costing a penny for repairs. The Barrett Specification, stipulating known quantities, known qualities and known craftsmanship to produce a known result, appeals particularly to the modern business mind.

Barrett Specification Roofs are bonded for 20 years* against repair or maintenance expense, but actually the expense-free protection of a Barrett Specification Roof outlasts by many years the term of the bond. The reasons for this remarkable durability are easily understandable. Barrett Specification Roofs are practically impervious to weather and atmospheric acids.

Water, which in time destroys most roofing materials, actually preserves pitch. No roof-covering retards fire to a greater degree than a built-up pitch and felt roof with a gravel or slag surface. Barrett Specification Roofs carry Underwriters' Class A rating.

Every Barrett Specification Roof is applied by one of the 614 Barrett Approved Roofers, each selected for his experience, ability and integrity. Consult with them or with us on any roofing problem.

*The Barrett Company also offers a Specification Type "A" roof which is bonded for 15 years. This type of roof is adaptable to a certain class of buildings. The same high-grade materials are used, the only difference being in quantity.

Barrett Specification Roofs

FINANCIAL NEWS

Bond Issues Proposed

Ala., Birmingham—City voted \$4,000,000 bonds: \$3,000,000, widening, straightening and deepening channels of Village and Valley Creeks; \$1,000,000, purchase land for airport; receives bids about April; A. J. Hawkins, City Engr. 1-16

Arkansas—State Highway Note Bd., Ralph Koonce, State Treas., Little Rock, receives bids Mar. 7 on \$9,000,000 short term notes; statutory prohibition against sale of bonds at less than equivalent of par at 5% interest, prevented submission of any bids on \$18,000,000 road bonds, offered Feb. 12, by State Highway Note Bond. 1-9

Ark., Lewisville—Comms. of Sewer and Water Improvement Dist. No. 1, J. W. Velvin, Lewisville, receive bids Feb. 28 for \$81,000 bonds.

Ark., Mena—Water—City votes March 12 on \$40,000 bonds.

Ark., Pine Bluff—City, reported, votes Apr. 8 on \$63,000 library bonds; Chris Wright, City Engr. 1-30

Fla., Bartow—Polk County Bd. of Public Instruction, Hugh W. Wear, Chmn., receives bids March 5 for \$100,000, 6%, \$1,000 denom. bonds; \$25,000, Special Tax School Dist. No. 26; \$35,000, Dist. No. 3; \$30,000, Dist. No. 4; \$10,000, Dist. No. 22.

Fla., Leesburg—Refunding—City, W. E. Karkness, Clk., receives bids March 24 for \$100,000, 6% bonds.

Fla., Pensacola—Bridge—Escambia County, Langley Bell, Clk., probably sell in March \$200,000 bonds. 10-17-29

Ga., Dalton—School—City plans voting on \$95,000 bonds.

Ga., Macon—City, G. Glen Toole, Mayor, votes Mar. 18 on \$1,000,000 bonds: \$350,000, storm sewer; \$150,000, sanitary sewer; \$100,000, hospital; \$200,000, street paving; \$100,000, parks; \$100,000, incinerators. 2-13

Ga., Moniac—Moniac School Dist., Charlton County, votes March 10 on \$15,000 bonds.

Ky., Drakesboro—Drakesboro Consolidated School Dist. plans \$10,000 to \$12,000 bond issue.

La., Bastrop—Hospital—City, C. J. Goodwin, Mayor, receives bids Mar. 18 for \$65,000, 6%, \$1,000 denom. bonds.

La., Bogalusa—City Comsn. Council, K. I. Bean, Clk., rejected bids, Feb. 7 for \$100,000, 5% school bonds. 2-6

La., Columbia—Caldwell Parish Police Jury, R. R. Redditt, Sec.-Treas., rejected bids Feb. 11 for \$145,000 bonds: \$45,000, Road Dist. No. 1; \$100,000, Road Dist. No. 2. 1-23

La., Hosston—Hosston School Dist., Caddo Parish, voted \$100,000 bonds; E. Weldon Jones, Supt., Caddo Parish School Bd. 1-2

La., Mount Hermon—Mount Hermon and Sunny Hill School Districts, considering \$30,000 bond issue.

La., Natchitoches—Airport—City, John H. Keyser, Mayor-Commr., receives bids March 6 for \$35,000, 6%, \$500 denom. bonds. 8-26

La., Ringgold—Blenville Parish voted \$100,000 school bonds; E. H. Fisher, Arcadia, Supt. of Blenville Parish School Bd.

Miss., Pittsboro—Road—Calhoun County, Beat 5, votes Feb. 28 on bonds.

Mo., Campbell—City, D. A. Snider, Clk., voted \$20,000 bonds to build electric light distributing system; R. M. Jones, Mayor. 1-2

Mo., Hickman—Consolidated School Dist. No. 1, Jackson County, including Hickman Mills, Holmes Park, voted \$90,000 bonds; H. B. Greene, Pres., School Dist.

Mo., Noel—City voted \$18,700 school bonds.

Mo., New Madrid—Bd. of Education, New Madrid Consolidated School Dist., No. 9, called election for Feb. 25 on \$32,000 bonds.

Mo., Pineville—Road—McDonald County, White Rock Special Road Dist., voted \$12,000 bonds to purchase right of way on Highway No. 88, from White Rock to Arkansas State line.

Mo., Sedalia—Road—Pettis County, Chas. Ewen, Clk., receives bids March 4 for \$200,000, \$1,000 denom. not to exceed 5% bonds.

Mo., University City, St. Louis—Bd. of Education called election for March 7 on \$225,000 bonds.

N. C., Angler—Harnett County Commrs., Lillington, plan selling \$35,000 school bonds.

N. C., Canton—Canton Graded School Dist., A. J. Hutchins, Sec., Bd. of Trustees, receives bids Feb. 28 for \$240,000, \$1,000 denom. not to exceed 6% bonds.

N. C., Charlotte—Underpass—City, Edgar Read, Clk., considering not over \$100,000 bond issue.

N. C., Lexington—Davidson County Commrs., receive bids March 3 for \$118,000 school bonds.

N. C., Wilmington—New Hanover County Commrs., considering \$350,000 bond issue for schools.

Okla., Muskogee—City defeated \$200,000 school bonds. 1-30

S. C., Ninety Six—Water—Town, W. B. Jeter, Clk.-Treas., receives bids Feb. 27 for \$80,000 bonds.

Tenn., Athens—Refunding—McMinn County Bd. of Education, L. C. Ogle, Chmn., receives bids Feb. 25 for \$60,000, 5% bonds.

Tenn., Elton—Jefferson Davis Parish School Bd., Jennings, receives bids March 6 for \$90,000 bonds. 1-2

Tex., Beaumont—Road—Jefferson County, B. B. Johnson, County Judge, considering bond election.

Tex., Benton—Refunding—Polk County, R. T. Nicholson, County Judge, did not sell, Feb. 8, \$100,000, 5% bonds. 1-10

Tex., Brady—Road—McCulloch County considering \$1,250,000 bond issue.

Tex., Crockett—Bd. of Education, I. J. Deck, receives bids about April 1 for \$100,000 Independent School Dist. bonds. 12-5

Tex., Dallas—Sewer—City, J. Waddy Tate, Mayor, plans voting April 1 on \$4,000,000 bonds; W. S. Tanner, Sanitary Engr.

Tex., Fabens—City votes Mar. 1 on \$60,000, 6% bonds: \$55,000, water; \$5,000, levees, storm sewers, drainage.

Tex., High Island—High Island votes March 15 on \$12,000 school bonds; O. E. Kennedy, School Supt.

Tex., Houston—General Advisory Committee on Bonds plans calling election March 22, tentative date, on \$13,070,000 city, county and navigation bonds and for hospital facilities. City, \$5,650,000; Water, \$1,000,000; sanitary sewers, \$1,000,000; storm sewer drainage \$750,000; paving, \$1,000,000; parks, \$200,000; bridges and subways, \$400,000; fire dept., \$100,000; macad. streets, \$200,000. Navigation Dist.—\$2,923,000; Enlargement of grain elevator, \$1,500,000; municipal Belt Ry., \$423,000; land under option for spoil usage, \$600,000; wharf additions, \$40,000. County — \$3,997,000; State Highways, county's share, \$880,000; highway and bridges, \$2,662,000; underpass, county's share, \$280,000; aid to city's projects, \$175,000; hospital facilities, \$1,500,000.

Tex., Lagrange—Road—Fayette County, Road Dist. No. 2, considering \$110,000 bonds election.

Tex., Marfa—Road—Presidio County Commrs., considering \$600,000 bond election. 11-14-1929

Tex., Perryton—Perryton Independent School Dist., W. B. Irvin, Supt., defeated bond issue Feb. 8. 1-30

Tex., San Angelo—Bd. of Education, Felix Smith, Supt., called election for March 11 on \$150,000 bonds. 2-6

Tex., San Antonio—City, C. M. Chambers, Mayor, considering \$17,000 bond issue for river beautification.

Tex., San Saba—City considering \$75,000 bond election for paving.

Tex., Temple—School—City votes March 28 on bonds.

Tex., Wellington—Wellington Independent School Dist. voted \$55,000 bonds. 2-6

Tex., Victoria—Road—Victoria County, J. J. Woodhouse, County Judge, receives bids Feb. 25 for \$369,000, 4 1/2% to 5 1/2%, \$1000 denom. Series E bonds.

Va., Marion—Smyth County votes March 11 on \$35,000 bonds to repair and enlarge county jail; L. Kent, County Clk.

Va., Norfolk—General Improvement—City, I. Walke Truxton, Mgr., receives bids Feb. 28 for \$1,100,000 4 1/2% bonds. 2-13

Va., Richmond—City, J. Fulmer Bright, Mayor, considering \$500,000 bond issue for paving.

Bond Issues Sold

Ala., Mobile—Road, Bridge—Mobile County Bd. of Revenue and Road Commrs., E. C. Doody, Clk., sold \$1,200,000, 4 1/4% bonds at 95.70 to group composed of Lehman Bros., Kountze Brothers, Stone & Webster & Blodgett, Inc., R. W. Pressprich & Co., Rogers Caldwell & Co., Inc., all New York; Marx & Co., Birmingham; First National Bank, Montgomery, Ala. 1-23

Ark., Magnolia—Columbia County sold \$68,000, 5% courthouse and jail bonds to Caldwell & Co., Nashville, at par.

La., Lake Providence—Sewer—Town, S. B. Kennedy, Clk., sold \$100,000, 5% bonds to Hibernia Securities Co., New Orleans, La. 1-9

La., Many—Sabine Parish School Bd., G. C. Reeves, Sec., sold \$45,000, 5 1/4% Zwolle Dist. bonds, to Sabine State Bank and Trust Co., Many, at par. 1-30

Maryland—Indebtedness—State, John M. Dennis, State Treas., Annapolis, sold \$787,000, 4 1/2%, \$1000 denom. "General Construction Loan of 1929" certificates at 103.443, to J. A. W. Iglehart & Co., 102 St. Paul Place, Baltimore. 1-16

Miss., Belzoni—Rehabilitation—Humphreys County, A. R. Hutchens, Chancery Clk., sold \$167,500, 4 1/2% bonds, jointly, to Commerce Securities Co., 120 Madison St., Memphis, Tenn., and Meridian Finance Corp., Meridian Finance Corp. Bldg., Meridian, Miss. 1-30

Miss., Drew—Commerce Securities Co., 120 Madison St., Memphis—Tenn., reported, purchased \$65,000 school bonds.

Miss., West Point—Road, Bridge—Clay County Bd. of Suprs., Julia H. Johnson, Chancery Clk., sold \$40,000, 5 1/4%, \$1000 denom. refunding bonds to A. K. Tigrett & Co., 71 Madison St., Memphis, Tenn., at \$455 premium and expenses. 1-16

N. C., Goldsboro—Public Improvement—City, J. G. Spence, Clk., sold \$100,000, 5% bonds to Seasingood & Mayer, Cincinnati, at \$83 premium. 1-30

S. C., Greenville—Greenville County Sinking Fund Comsn., W. L. Miller, County Treas., reported, will purchase \$150,000, 4 1/4% \$1000 denom. tuberculosis hospital bonds.

S. C., Greenville—Water—City, A. C. Mann, Mayor, sold \$300,000, 5%, \$1000 denom. bonds at \$6500 premium, to C. F. Childs Co., New York. 2-6

S. C., Loris—Loris or Simpson Creek High School Dist. No. 2, C. D. Prince, Clk., sold \$44,000, 6% bonds to South Carolina National Bank, Charleston, at \$895 premium. 1-23

Tenn., Bolivar—Road—Hardeman County, reported, sold \$250,000, bonds to Caldwell & Co., Nashville, at par.

Tenn., Bruceton—Water—City, A. G. Lowe, Mayor, sold \$45,000, 5 1/4% bonds to Joseph-Hutton-Estes Co., Nashville, par, accrued interest and \$600 premium. 1-30

Tex., Breckenridge—Road—Stephens County Commrs. Court, W. J. Arrington, County Judge, sold \$100,000 5 1/2% \$1,000 denom. bonds to Garrett & Co., Dallas, at par, accrued interest and \$50 bonus.

Tex., Longview—City, B. N. Taylor, Mgr., sold \$140,000 improvement bonds to Caldwell & Co., Nashville, at par, accrued interest and expenses. 12-19

Tex., Point Isabel—Cameron County Commrs. Court, Brownsville, purchased \$15,000, 5 1/2% of \$500,000, Point Isabel-San Benito Navigation Dist. bonds at par and accrued interest.

Va., Purcellville—Town Council ratified sale of \$75,000 water bonds to McDaniel Lewis, Greensboro, N. C., representing J. B. McCrary Co., Citizens & Southern Bank Bldg., Atlanta, Ga.

West Virginia—Road—State, Wm. G. Conley, Governor, Charleston, sold \$5,000,000 bonds at 100.002 to syndicate composed of First National Bank, Bancamerica-Blair Corp., R. W. Pressprich & Co., Phelps, Fenn & Co., George B. Gibbons & Co., Inc., Salomon Bros. & Hutzler, all New York; Halsey, Stuart & Co., Inc., Northern Trust Co., both Chicago; \$3,950,000, 4 1/2%; \$1,050,000, 4%. 1-16

New Financial Corporations

La., Napoleonville—Citizens Bank & Trust Co., Bank of Napoleonville Bldg., organized; Judge Philip H. Gilbert, Clarence C. Barton, Ansil N. Simmons; plans opening Feb. 24.

(Continued on page 99)

DELAWARE CORPORATIONS

ORGANIZED

REPRESENTED

Registered in Other States

"DIGEST" OF DELAWARE CORPORATION LAW with forms for incorporating, also pamphlet on "Stock Without Par Value under Delaware Law" on request.

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1830

1930



A Storehouse of History

ORGANIZED 100 years ago in Petersburg, Virginia, a city rich in historic interest and destined to play a deciding part in events of future years, the Petersburg Railroad was the worthy pioneer of that notable group of railroads, serving the famed coastal plains of the Southeast, that were brought together to form the Atlantic Coast Line Railroad Company.

No part of America has more of historic interest than the sections served by the Coast Line. Here is a land that "fairly reeks with history".

Gentlemen of France, Grandees of Spain; Lords and adventurers of Merrie England; pirates and buccaneers; Indian fighters, baronial planters, noted statesmen; the persistent, will-o'-the-wisp forces of Sumter and Marion; the ragged, hungry, undaunted armies of the Confederacy. All these have lived and loved and fought and died and left their imprint here.

In this section the first English colonies in America were started; France and Spain made futile bids for this great empire.

Here are cities and towns that date back to the dawn of our country's history. Many have known the hardships of occupation by hostile

armies. Hardly a cross-roads hamlet but has witnessed stirring and important events, or has sent its sons to play leading parts in the affairs of their times.

Here the tyranny of George the Third first met with outspoken and organized resistance.

Here scores of bloody battles have been fought. These shores have been pillaged by Blackbeard and Gasparilla and other pirates of their day. Into these ports swift blockade runners came, daring the fire of Union fleets, to bring food and munitions to Lee's tattered forces.

Richmond, Norfolk, Petersburg, Newbern, Wilmington, Fayetteville, Augusta, Columbia, Charleston, Savannah, Brunswick, Montgomery, St. Augustine, Tampa, Bradenton. Each name brings up pictures of the stirring events that all of these have seen. And there are scores of other places where much history has been made.

Not the least important event of an eventful century has been the welding of more than 100 railroads into the Atlantic Coast Line System, serving the six southeastern states and making a reality of that "Great Highway of the Union" which the founders of the Petersburg Railroad envisaged one hundred years ago.



ATLANTIC COAST LINE

The Standard Railroad of the South

{ This is the second of a series of advertisements by the Atlantic Coast Line Railroad, commemorating the centennial of its earliest constituent company — the Petersburg Railroad Company }

FINANCIAL NEWS

(Continued from page 96)

Md., Baltimore—National City Corp., 10 E. Lexington St., chartered; Walter L. Bean, Edward S. Hine, George Edward Moul, all Washington, D. C.

Md., Baltimore — Universal Investment Trust Corp., 1110 Munsey Bldg., capital \$1,000,000, chartered; August T. Heying, Jr., J. Kenneth Healy, Leo P. Voelker.

Md., Baltimore—Equitable Corporation of New York, 10 Light St., chartered; W. Rice Brewster, William Hale Harkness, both New York; securities.

Mo., Charleston—First Security State Bank of Charleston, capital \$30,000, chartered; E. D. Nims, 1010 Pine St., St. Louis.

Mo., Highlandville—Central Ozarks Investment Co., capital \$50,000, chartered; W. W. Thomas, E. H. LeCompte.

Mo., Jefferson City—Tom C. Chambers Investment Co., Inc., capital \$50,000, chartered; Tom C. Chambers.

Mo., Kansas City—Traders Gate City National Bank, J. R. Dominick, Pres., W. B. Planck, V.-P., plans opening Feb. 24 at 1111 Grand Ave. 1-9

N. C., Durham — Independent Securities, Inc., capital \$100,000, chartered; J. H. Epperson, 1202 Mangum St., Eric H. Copeland.

Okla., Blackwell—Liberty Mortgage & Investment Co., capital \$25,000, chartered; M. P. and E. W. Bottenfield, W. A. O. Via.

Okla., Buffalo—Oklahoma State Bank, capital \$20,000, chartered; G. A. Harbaugh, J. C. Powers, both Selman; D. H. Powers, Freedom.

Okla., Enid—Sanford-Felt Investment Co., capital \$50,000, chartered; R. L. and Ethel Sanford; Floyd E. Felt.

Okla., Tulsa—National Credit Co. chartered; J. E. Dappert, 507 N. Tacoma St.

Tenn., Chattanooga—Hamilton National Associates, Inc., capital \$20,000,000, organizing; T. R. Preston, Pres.; holding company for group of banks located in Chattanooga economic territory. 1-23

Tex., Abbott—First National Bank of Abbott, capital \$25,000, organized; J. C. Matejka, correspondent.

Alfred I. duPont, Pres. of Almour's Securities, Inc., Jacksonville, Fla., accepted presidency of Florida National Bank of Jacksonville; Arthur F. Perry, former president of Florida National Bank of Jacksonville, will become Vice-Chmn. of Bd. of Directors of Barnett National Bank of Jacksonville.

Arnold Elzey Waters, of Townsend Scott & Son, Baltimore, Md., announces formation of Scott Corporation, investment trust of management type, sponsored by Baltimore banking interests; Mr. Waters will be president.

Bd. of Directors of Alabama National Bank, M. A. Vincentelli, Pres., Montgomery, Ala., approved proposal to increase capital, \$300,000 to \$500,000; submit to stockholders March 15.

Branch Banking & Trust Co., H. D. Bateman, Pres., Wilson, N. C., purchased Farmers & Merchants Bank, J. D. Biggs, Pres., Williamston, N. C.

Central Trust Co., W. L. Reno, Pres., Owensboro, Ky., plans increasing capital, \$200,000 to \$400,000.

Citizens Bank, W. H. Cooley, Pres. and Bank of Carl Junction, C. W. Hilliker, Pres., both Carl Junction, Mo., consolidated as Citizens Bank of Carl Junction, with \$30,000 combined capital; W. H. Cooley, Chmn. of Bd. of Directors; W. H. Clark, Cashier.

First National Bank, Frank M. Moody, Pres., absorbed Merchants Bank & Trust Co., C. B. Verner, Pres., both Tuscaloosa, Ala.

First National Bank, W. C. Bowman, Pres., absorbed Fourth National Bank, Henry M. Hobbie, Pres., both Montgomery, Ala., forming \$20,000,000 banking institution.

Oklin Investment Co., Muskogee, Okla., increased capital, \$100,000 to \$150,000.

Royal Building & Loan Assn. of Baltimore City, Inc., Baltimore, Md.; increased capital, 3,000 shares, par value \$100, to 10,000 shares, par value \$100.

Stockholders of Fidelity Trust Co., R. M. Eacock, Treas., Oklahoma City, Okla., authorized increase in capital, \$20,000 to \$200,000.

Utilities Investment Corp., Louisville, Ky., plans increasing capital \$10,000 to \$50,000.

Union Trust Co., Chas. C. Blanton, Pres., and Cleveland Bank & Trust Co., Wm. Linberger, Pres., both Shelby, N. C., consolidated with about \$500,000 capital, and resources nearly \$2,000,000; Union Trust Co., will open offices in Rutherfordton and Forest City.

Birmingham Votes \$4,000,000

Bonds

Birmingham, Ala.—Voters of Birmingham have approved a bond issue of \$1,000,000 for constructing a municipal airport and \$3,000,000 for improving the drainage system. It is planned to purchase approximately 300 acres of land between Woodlawn and Tarrant City for an airport and to erect a hangar and other facilities and to drain the tract. The site was selected by a committee composed of Maj. Sumpter Smith, City Attorney J. H. Willis and City Engineer A. J. Hawkins. It is five miles from the Birmingham postoffice and has been approved by the United States Department of Commerce as suitable for development into an A-1-A rating, which will require lighting for night flying. The drainage bonds will provide funds for flood protection in Village and Valley creeks by widening and deepening the two streams.

Plan \$650,000 Bond Issue

Joplin, Mo.—A \$650,000 bond issue for school improvements in Joplin is being considered by the Board of Education, Dr. J. J. Barnett, president. Funds from the issue would be used to erect a \$250,000 North junior high school building, an addition to the Emerson school and make improvements to other schools in nearly every section of the city.

Maryland Sells \$787,000 Loan

Certificates of indebtedness of the Maryland general construction loan of 1929, in the amount of \$787,000, have been sold to J. A. W. Iglehart & Co., Baltimore, at a price of 103.443. Funds will be used for improvements to hospitals, tuberculosis sanatoriums, penitentiary, house of correction, Chestertown armory and at College Park.

Alfred I. DuPont Heads Jacksonville Bank

Jacksonville, Fla.—Alfred I. duPont, president of Almour's Securities, Inc., of this city, has accepted the presidency of the Florida National Bank here, one of the leading financial institutions in the state. It is announced that Arthur F. Perry of the Florida National Bank, will become associated with the Barnett National Bank of Jacksonville, becoming a member of the board of directors and vice chairman of the board.

Working Out Mergers.—Six major factors to be considered in working out mergers are analyzed in a 32-page booklet issued by Ernst & Ernst, public accountants and auditors, New York. The booklet is a reprint of a paper on the subject presented by A. D. Berning, partner of the firm, at a recent convention of the American Management Association in Detroit.

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\$2,000,000 BALTIMORE GARAGE PLANS COMPLETED

1000-Car Structure to Be Erected in
Downtown Business Section

Plans have been completed and general contract awarded for erecting a 1000-car parking garage at Saratoga and St. Paul streets, Baltimore, for the St. Paul Garage Company. The building, to cover a ground area of approximately 37,000 square feet, will be of brick and reinforced concrete, four stories above St. Paul street and one story below, with foundations, columns, and walls of sufficient strength to carry three additional stories. It will be equipped with a double-spiral ramp to provide separate up and down drive-ways, thereby maintaining one-way traffic with no crossing of traffic lanes within the garage. Separate entrance and exit doors will be provided, each doorway capable of taking three lanes of traffic. Stores will be located along the St. Paul and Saratoga street fronts, with show windows and entrances into the main lobby or arcade of the garage. From the corner of St. Paul and Saratoga streets, a pedestrian entrance will lead into the main lobby on the first floor and another entrance from Saratoga street near Charles street into a second floor lobby designed especially for women patrons. The project will represent a cost of approximately \$2,000,000. Wyatt & Nolting are the architects and the Consolidated Engineering

Co., Inc., general contractor, both of Baltimore. Thomas Mullan, Baltimore, has contract to raze buildings on the site. In line with its plans for financing the structure, the St. Paul Garage Company is offering \$750,000 7 per cent cumulative preferred stock through Gillet & Co., Baltimore.

Can Factory for Jacksonville

Jacksonville, Fla.—The Continental Can Company, Inc., New York, has completed plans for establishing a can making plant at Jacksonville, according to Charles E. Muller, manager of the Industrial Division of the Jacksonville Chamber of Commerce. The plant will add approximately \$200,000 to the city's industrial payroll and will serve sections of Georgia and Florida which have heretofore been served by the company's plants in Maryland and Virginia. It is believed that the enterprise will accelerate the growth of the canning industry in Jacksonville, where approximately 27 per cent of Florida grown and Florida packed grapefruit is produced. It will also stimulate the coffee roasting and canning industry here which has so developed in recent years as to make Jacksonville an important port of import for coffee berries.

Within the past 12 months approximately \$2,000,000 of new capital has been invested here in new industries. A recent addition to Jacksonville's industries was the centralization here of the shrimp

canning activities of the Brooks-Hirth Corbitt Corporation, which previously operated at Beaufort, S. C., and Fernandina and St. Augustine, Fla. The company also operates a citrus canning plant.

\$800,000 Bank Addition

Richmond, Va.—The Federal Reserve Bank of Richmond, George J. Seay, governor, plans to erect an addition to its main building at Ninth and Franklin streets, at a cost of approximately \$800,000. Plans for the structure are being prepared by Taylor & Fisher, Baltimore, and are expected to be completed within 90 days. It will occupy a lot 75 by 120 feet.

Developing New Airplane Engine

Los Angeles, Cal.—According to Charles Foster Willard, chief engineer of the Aircraft Finance Corporation of America, of this city, a new airplane engine is being developed in Los Angeles for burning oil instead of gasoline. The engine is of 400 horsepower and of the radial, air-cooled compression type, with an overall diameter of 42 inches. Valves, valve gears, spark plugs, wires, switches, carbureter, spark-advance levers, choke and heater controls and two magnetos are some of the units eliminated, it is said, and only a single throttle remains for the operator to handle. The development of the engine is claimed to be well beyond the experimental stage.



BOND ISSUES

PROPOSALS

BUILDINGS

PAVING

GOOD ROADS



Bids close March 1, 1930.

War Department, Office Constructing Quartermaster, Fort Bragg, N. C. Sealed proposals in triplicate will be received until 10 A. M. March 1, 1930, and then publicly opened, for the construction and completion of sixteen (16) Non-commissioned Officers' quarters at Fort Bragg, North Carolina. This is same work previously advertised with opening date February 14, 1930. No change other than date of opening. \$25.00 deposit, certified check, payable to Treasurer of United States, required for drawings, etc. Further information on request.

Bids close March 27, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., February 15, 1930.—SEALED BIDS will be opened in this office at 3 P. M. March 27, 1930, for extension and remodeling of the U. S. Postoffice one story and basement extension, approximately 6000 sq. ft. ground area, at Lakeland, Fla. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the Supervising Architect, by any satisfactory general contractor and provided a deposit is made of \$25.00 for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

GENERAL INFORMATION

About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.

FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

THE
DAILY CONSTRUCTION BULLETIN
OF THE
MANUFACTURERS RECORD:

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close March 24, 1930.

TREASURY DEPARTMENT, Bureau of Engraving and Printing, Washington, D. C., February 13, 1930.—Sealed proposals are invited to furnish paper boxes, paper box blanks and paper, during the fiscal year beginning July 1, 1930. Samples must be received at the Bureau of Engraving and Printing not later than 2 P. M. Monday, March 24, 1930. Blank forms with specifications for proposals, giving dates on which the bids for the several schedules will be opened, and further information will be furnished on application to A. W. HALL, Director.

Bids close March 24, 1930.

TREASURY DEPARTMENT, Bureau of Engraving and Printing, Washington, D. C., February 6, 1930.—Sealed proposals are invited to furnish dextrine, oils, textiles and dry colors during the fiscal year beginning July 1, 1930. The right is reserved to reject any or all bids or parts of bids. Samples must be received at the Bureau of Engraving and Printing not later than 2 P. M. March 24, 1930. Blank forms with specifications for proposals, giving dates on which the bids for the several schedules will be opened, and further information will be furnished on application to A. W. HALL, Director.

Bids close March 20, 1930.

U. S. Engineer Office, Wilmington, North Carolina. Sealed bids, in duplicate, will be received until 12 o'clock noon March 20, 1930, and then publicly opened, for furnishing all labor and materials and performing all work for dredging approximately 486,234 cubic yards, in Section IV, of the Intra-coastal Waterway from Beaufort to the Cape Fear River, N. C.

Bids close March 6, 1930.

TREASURY DEPARTMENT, office of Supervising Architect, Washington, D. C., February 8, 1930.—SEALED PROPOSALS will be opened in this office at 3 P. M. March 6, 1930, for furnishing all labor and material necessary for a complete elevator plant in the U. S. P. O. and Ct. Ho. at Dallas, Texas. All prospective bidders are hereby notified that any bid submitted in response to this advertisement must be accompanied by a statement of facts in detail of the business and technical organization of the bidder available for the contemplated work, including financial resources and building experience, etc. The United States expressly reserves the right to reject any bid in which the facts as to business and technical organization, financial resources or building experience, compared with the project bid upon, justify such rejection. The successful bidder will be required to furnish a performance bond of 50% of the contract price. Drawings and specifications may be obtained from this office. JAS. A. WETMORE, Acting Supervising Architect.

Bids close February 25, 1930.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS
STATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building six sections of State Highway as follows:

Anne Arundel County, Contract No. AA-80—One section of State Highway along the Sear's Store-Bristol Road, from the end of Contract No. AA-62 to Bristol, a distance of 1.83 miles (gravel).

Baltimore County, Contract No. B-130—One section of State Highway along the Dover Road from the end of Contract No. B-96 to Butler, a distance of 1.99 miles (concrete).

Cecil County, Contract No. Ce-74—One section of State Highway along the Pearce Neck Road, from the end of Contract No. Ce-59 to White Crystal Beach, a distance of 3.2 miles (alternate bids on concrete and macadam with concrete shoulders).

Kent County, Contract No. K-49—One section of State Highway along the Locust Grove-Black Station Road, a distance of 1.58 miles, and along the road from the Still Pond Road to Coleman, a distance of 0.88 mile, making a total distance of 2.46 miles (concrete with slag shoulders).

Kent County, Contract No. K-50—One section of State Highway along the Rock Hall-Eastern Neck Island Road, from the end of Contract No. K-42 to the bridge at The Narrows, a distance of 0.79 mile (concrete with slag shoulders).

St. Mary's County, Contract No. SM-55—One section of State Highway from Ridge toward Trap, a distance of 1.06 miles, and from the end of Contract No. SM-34 near Pearson toward Cedar Point, a distance of 1.0 mile, making a total distance of 2.06 miles (gravel), will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 25th day of February, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 11th day of February, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

Bids close March 11, 1930.

Delaware Highway Work

Dover, Del.

Sealed proposals will be received by the State Highway Department at its office, Dover, Del., until 2 o'clock P. M. March 11, 1930, and at that place and time publicly opened, for contracts involving the following approximate quantities:

CONTRACT 133

Whitehall Neck Road—2.65 Miles
7,000 Cu. Yds. Excavation.
1,000 Cu. Yds. Borrow.
3,800 Tons Br. Stone Base Course.
450 Lin. Ft. 15-in. Corr. M. Pipe.
34 Lin. Ft. 18-in. Corr. M. Pipe.
1,200 Lin. Ft. Wood Shoulder Curb.

CONTRACT 134

Thompsonville-South Bowers Beach
4.31 Miles
1½ Acres Clearing.
1½ Acres Grubbing.
9,500 Cu. Yds. Excavation.
3,500 Cu. Yds. Borrow.
1,200 Tons Br. Stone Base Course.
4,600 Tons Bro. Slag Base Course.
50 Cu. Yds. Cl. "A" Concrete.
2,200 Lbs. Reinforcement.
350 Lin. Ft. 16-in. C. I. Pipe.
34 Lin. Ft. 20-in. C. I. Pipe.
72 Lin. Ft. 24-in. C. I. Pipe.
600 Lin. Ft. 15-in. Corr. M. Pipe.
5,000 Lin. Ft. Wood Shoulder Curb.
400 Lin. Ft. Timber Piling.

CONTRACT 146

Masten's Corner-Hollandsville—3.07 Miles
8,000 Cu. Yds. Excavation.
1,500 Cu. Yds. Borrow.
3,160 Cu. Yds. Concrete Pavement.
1,400 Lin. Ft. Expansion Joint.
125 Cu. Yds. Cl. "A" Concrete.
3,500 Lbs. Reinforcement.
550 Lin. Ft. 15-in. Corr. M. Pipe.
270 Lin. Ft. 15-in. R. C. Pipe.
150 Lin. Ft. 18-in. R. C. Pipe.
30 Lin. Ft. 24-in. R. C. Pipe.
30 Lin. Ft. 30-in. R. C. Pipe.
30 Lin. Ft. 36-in. R. C. Pipe.
800 Lin. Ft. Wood Shoulder Curb.

CONTRACT 159

Sidewalk at Seaford School—½ Mile
360 Cu. Yds. Excavation.
12,000 Sq. Yds. Cement Concrete Sidewalk.
200 Cu. Yds. Borrow.

CONTRACT 67

Ellott's Crossing Elimination (Bridgeville)
0.4 Miles
1,300 Cu. Yds. Excavation.
500 Tons Cinder Base Course.
30 Lin. Ft. 15-in. Corr. M. Pipe.
30 Lin. Ft. 18-in. Corr. M. Pipe.

CONTRACT 160

Bridgeville Police Station to Baker's Corner
0.9 Miles
1-3 Acre Clearing.
1-3 Acre Grubbing.
3,500 Cu. Yds. Excavation.
500 Cu. Yds. Borrow.
950 Cu. Yds. Concrete Pavement.
360 Lin. Ft. Expansion Joint.
200 Cu. Yds. Cl. "A" Concrete.
800 Lbs. Reinforcement.
180 Lin. Ft. 15-in. Corr. M. Pipe.
20 Lin. Ft. 15-in. R. C. Pipe.
20 Lin. Ft. 18-in. R. C. Pipe.
1,400 Lin. Ft. Wood Shoulder Curb.
800 Lin. Ft. Timber Piles.

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

Monthly payments will be made for 90 per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by a surety bond, certified check or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal must be marked "Proposal for the construction of State Highway Contract No."

The contract will be awarded or rejected within twenty (20) days from the date of opening proposals.

The right is reserved to reject any or all bids.

Complete sets of plans and specifications may be obtained upon receipt of two dollars (\$2.00) for each contract, which amount will not be refunded.

STATE HIGHWAY DEPARTMENT,

Dover, Delaware.

Bids close March 31, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., February 17, 1930.—SEALED BIDS will be opened in this office at 3 P. M. March 31, 1930, for clearing the site and the construction (except elevators) of six-story, basement and sub-basement, brick faced, fire-proof Department of Agriculture extensible building, approximately 86,000 square feet ground area, at Washington, D. C. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the Supervising Architect, by any satisfactory general contractor, and provided a deposit of \$50 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 1, 1930.

Louisiana Highway Work

POSTPONEMENT DATE RECEIVE BIDS

Baton Rouge, La.

Notice is hereby given by the Louisiana Highway Commission, Louisiana National Bank Building, Baton Rouge, Louisiana, that the date for receiving bids for construction of the projects listed below has been postponed from 11 A. M. Tuesday, February 25, 1930, to

11 A. M. Tuesday, April 1, 1930.

PROJECT NO. 1001, CROWLEY-DUSON HIGHWAY, Acadia and Lafayette Parishes, Route No. 2. Length 14.0 miles. Concrete Pavement.

PROJECT NO. 6551, BERNICE-DURACH HIGHWAY, Union Parish, Route No. 5. Length 6.0 miles. Concrete Pavement.

HARRY B. HENDERLITE,

State Highway Engineer.

O. K. ALLEN, Chairman.

Louisiana Highway Commission.

Bids close March 5, 1930.

Sanitary Sewers

Gretna, La., Jan. 21, 1930.

Sealed proposals will be received by the Mayor and Board of Aldermen of the City of Gretna at the office of the City Clerk, 422 Fifth Street, Gretna, La., up to 8 o'clock P. M. of Wednesday, March 5, 1930, for the construction of a system of sanitary sewers for the City of Gretna.

Plans, specifications and proposal forms may be obtained at the office of the City Engineer, 422 Fifth Street, Gretna, La., for a deposit of \$10.00, the deposit not to be refunded.

A certified check, money order or U. S. Currency in the amount of \$10,000.00 must be deposited with the City Clerk not later than 7.30 o'clock P. M. of March 5, 1930.

Bond will be required for the full amount of the contract.

The City reserves the right to reject any and all bids.

CHAS. F. GELBKE,

Mayor.

ANTHONY PIERCE,

City Clerk.

Bids close March 10, 1930.

School Buildings

PRINCE GEORGE'S COUNTY, MARYLAND

Upper Marlboro, Md.

Sealed proposals will be received at the office of the Prince George's County Board of Education, Upper Marlboro, Maryland, until 4 P. M. March 10 for the erection of any or all of the following school buildings:

- (1) Mt. Rainier High School—13 rooms and auditorium.
- (2) Bradbury Heights Elementary School—8 rooms and auditorium.
- (3) Decatur Heights Junior High School—8 rooms.
- (4) Cheverly Tuxedo Elementary School—2 rooms and basement, addition to present buildings.
- (5) Riverdale Elementary School—4 rooms and auditorium, addition to present building.

Plans and specifications may be obtained from the office of Upman & Adams, Architects, 1003 Woodward Building, Washington, D. C., on and after February 22, 1930, on deposit of \$10.

Bids will be opened at the Bladensburg School, Defense Highway and Edmondston Road, Bladensburg, Maryland, on Monday, March 10, at 8 P. M. The Board reserves the right to reject any or all bids.

NICHOLAS OREM,
County Superintendent.

CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

WANT TO SELL—Part mineral rights in geological structure leased by a Standard Oil Company to drill. Address 412 Phil-tower, Tulsa, Okla.

5000 A. Coal, Gas, Oil, Martin Co., Ky.
Going Coal Mine; lease or sale.
L. DEMPSEY,
Inez, Ky.

BLACK MARBLE

EXTENSIVE DEPOSITS over a large acreage of **BLACK MARBLE** for sale or lease. **QUALITY** has been tested and proven equal to Belgium marble.
STRINGER REALTY CO.,
Gadsden, Ala.

ROCK ASPHALT PROPERTY

FOR SALE—Rock-asphalt property, containing both limestone and sandstone rock-asphalts; 4000 acres, with large "going" plant, quarries and railroads. Exceptionally located for distribution in East and South. Material thoroughly tested in highway use. For particulars address No. 8059, care of Manufacturers Record, Baltimore, Md.

WHITE CLAY DEPOSITS

FOR SALE—White clay bed on So. Ry. 20 mi. Atlanta, suitable for brick or terra cotta. Report U. S. Govt., Dec, 1921, said: "Appears to be clay of very good quality, and is well worth further investigation." Will sell 95 A. or just clay acreage. Creek one side. **J. W. MUNDY**, Jonesboro, Ga.

CONCRETE AND GLASS SAND

FOR SALE—Extensive deposits of Concrete and Glass Sand. Owner can operate pits or sell sand on royalty basis. Pits now in profitable operation. Large paving contracts will be let soon in this territory. Address **J. D. Vaughan**, owner, Lumber City, Ga.

LIMESTONE DEPOSIT

FOR SALE

Limestone deposit, unlimited tonnage, near **ROBERT S. ANDERSON**, Hawkinsville, Ga. Hawkinsville, Ga.

TIMBER AND TIMBER LAND

HAVE 10,000,000 feet good pine timber, unlimited supply obtainable; 25,000 feet capacity mill on deepwater and railroad; lowest water rate to Eastern markets. Want wholesaler to handle output. Will saw to specifications. **CAHSIE LUMBER COMPANY**, Box 471, Windsor, N. C.

ATTENTION, INVESTORS.

I am offering for sale in the Southeast 80,000 acres of splendid timbered land, estimated to cut around 300 million feet saw-mill timber, of which approximately 70% is pine, balance cypress, poplar, ash, gum and oak. Main line railroad crosses the property. Price \$12.50 per acre. This is a real buy for an investment.
J. M. COX, Waycross, Georgia.

FARM AND TIMBER LANDS

FOR SALE or Trade, 320 acres Black Belt Land containing 2,000,000 ft. pine timber. Fine pasture and farming section near railroad, Lowndes County, Ala. Sacrifice, \$35 per acre. **J. S. AMROCK**, Mobile, Ala.

FARM, FRUIT AND TRUCK LANDS

FLORIDA

WE SPECIALIZE in large acreage tracts, also citrus groves, as well as the exchange of property. **P. JOHN HART REALTY CORPORATION**, Fort Myers, Florida.

SHEEP OR DAIRY FARM, 162 acres, 2 houses, at Dixie highway. Will divide to suit purchaser.

S. C. BROCK, Hilliard, Fla.

Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to a line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:
100 lines 28c a line
300 lines 26c a line
500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

FARM, FRUIT AND TRUCK LANDS

NEW YORK

NEW YORK FARMS FOR SALE

Beautiful York State dairy farm, 140 acres, large 17-room dwelling, furnished, every modern convenience in barns and house; 48 head of cows, lots of hay and ensilage; 14 acres of alfalfa, located on main highway in village of 3,000 people. Price, \$35,000, equity \$15,200; will exchange for apartment house, hotel or a going beef cattle ranch well stocked. **A. J. Keeley**, Greenwich, N. Y.

NORTH CAROLINA

FARM, GRAZING AND HUNTING LAND For Sale—16,000 acre tract good grazing land for cattle, sheep, hogs and goats. Also fine hunting range. Farm can be developed at little cost.

2000 acre tract fine grazing. Farm being developed, with new home and barn.

1200 acre tract, with farm partly developed, 150 acres; balance is reforesting.

1000 acre tract fine grazing and hunting. Farm can be developed at small cost.

THE PINE LUMBER COMPANY,

New Bern, N. C.

SOUTH CAROLINA

ISLAND, LAND AND TIMBER

For Sale—Four thousand acre island, twenty-one hundred high, one thousand cleared; fine truck land. Island abounds with deer, quail and other game; duck pond, high bluffs, several beautiful old home sites. Located on South Carolina coast; also other salt-water frontage, cut-over lands and timber. **J. W. BARNES**, Mendel Building, Savannah, Ga.

TEXAS

FOR SALE—570 acres Texas Winter Garden land; proven fine citrus fruit land, also all vegetables, grapes and nuts; located on U. S. Government highway; \$50.00 per acre for entire tract, or in small tracts at sixty to seventy-five dollars per acre. See or write **J. A. HEYMAN**, Junction, Texas.

BEAUTIFUL RANCH in sunny Texas; 963 acres, all sheep fenced. Two splendid sets improvements; 250 acres in cultivation; large, native pecan grove on creek running through land. Beautifully situated on highway 4 miles town. Great sheep and goat country. To see this ranch is to buy. Price \$28 acre.

R. B. EDGEELL, Lometa, Texas.

FARM, FRUIT AND TRUCK LANDS

VIRGINIA

VIRGINIA FARMS and Handsome Estates; conspicuous values at attractive prices. List on request. **W. T. BAILEY**, Suffolk, Va.

VIRGINIA COUNTRY ESTATES—Write for new illustrated free catalogue of handsome Virginia Country places, hunting preserves and stock and grain farms. **GEO. V. VENABLE & CO.**, Lynchburg, Va.

REAL ESTATE—MISCELLANEOUS

FOR SALE—Factory sites, city property, orchards, mills, stores, farms, etc. **R. S. BURKHOLDER**, Real Estate, Waynesboro, Virginia.

SOUTHERN HOME

SOUTHERN HOMES

in the best city in the Carolinas, \$10,000 to \$75,000, according to size and location.

F. C. ABBOTT & CO., Charlotte, N. C.

32 years in Charlotte Real Estate.

GAME PRESERVE

QUAIL HUNTING PRESERVE

Camden County, Ga.
10,600 acres, protected and improved. Well stocked with quail, deer and other game. Modern 7-room club house. Near Dixie Highway and S. A. L. Good investment value as forest land.

JAMES D. LACEY & CO., 350 Madison Ave., New York City.

PALMETTO BLUFF GAME PRESERVE

Beaufort County, S. C.
An exceptional 25,000 acre preserve, with improvements. Heavily stocked with game. Nine miles of river front. The timber under forest management will pay carrying charges and a high return on the investment.

JAMES D. LACEY & CO., 350 Madison Ave., New York.

BUSINESS OPPORTUNITIES

WANTED—Financial and other assistance to manufacture and market proven commercial patented machines that are greatly interesting public utilities and also cement companies. Address No. 8060, care of Manufacturers Record, Baltimore, Md.

FOR SALE OR RENT—Fully equipped candy factory, 15,000 square feet floor space, with sprinkler system. Excellent trade center, with ideal climate and labor conditions. Great opportunity for experienced man with small capital. For full information address **Kirkpatrick & Burks**, Lynchburg, Virginia.

FOR SALE—One-half interest in brick plant. Good proposition to one who can take complete charge. Over 600 acres of good material, clay, coal and shale. Good colors. Now making backups. On two railroads; inside shifting limits; one-half mile from town. Good domestic coal trade. Write **H. D. CUSICK**, New Comerstown, Ohio.

WANTED, STATE DIRECTORS—Parties qualifying will receive an interest for Director's services in a company incorporated to manufacture and exploit patented machines. An investigation will reveal power companies are interested in these machines to utilize pulverized fuel ash, cinders, etc.; also quarry waste materials and sand. Address No. 8051, care of Manufacturers Record, Baltimore, Md.

BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

DAIRY for sale in finest part of the South; modern buildings, plenty of land, water, pasture, good roads, electric power; near town of 25,000; ideal location; \$18,000.00. V. R. O'NEAL, LaGrange, Ga.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 573 Enright, St. Louis, Mo.

LUMBER AND FURNITURE MANUFACTURING OFFERS OPPORTUNITY WITH FUTURE.

As equal, silent or active partner, with young man who owns at Virginia shipping station twenty million feet Oak and Chestnut timber, in manufacturing same into furniture and building materials, requiring \$50,000 investment, amply secured by timber and realty. P. MAC, Box 14, Point Pleasant, Pa.

MAN OF ABILITY and responsibility can make unusual contract and become equal partner in a substantial Real Estate and Fruit Property in the Ozarks of S. W. Missouri. I have apples, strawberries, grapes, large tracts of grazing lands, timber lands, etc. I own my buildings; came here 50 years ago. Just simply have more business and work than one man can do. References exchanged. W. A. BALCH, Balch Building, Goodman, Mo.

FINANCIAL

MONEY WANTED

6, 7 and 8% Mortgage Loans on City, Town or Country property. Southern Land & Investment Co., Baton Rouge, Louisiana.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO., Woolworth Building New York City

DEVELOPING AND ENGINEERING

ORGANIZING—DEVELOPING—ENGINEERING

Engineering firm widely experienced in investigating, organizing developing, designing and supervising construction, solicit correspondence regarding development or extension of meritorious projects and existing industries, power plants and utilities. Address No. 8016, care Manufacturers Record.

INDUSTRIES WANTED

33,000,000 PEOPLE live within 24 hours train service from Carthage, Mo. On U. S. highways 66 and 71. Electricity as low as 0.9c. per K.W.H.; natural gas as low as 27c. per 1000 cu. ft.; industrial coal \$2.50 per ton, delivered. Labor wages, taxes and rent very reasonable. Good transportation facilities. Present industries are prosperous; others will find in Carthage an ideal location. Industrial Booklet free. Write

CHAMBER OF COMMERCE, 500 Main Street, Carthage, Mo.

CANNING FACTORY WANTED at Goodman, Mo., in the Ozarks. Offers unusual proposition to parties who are able to install modern factory. We have the products, the markets and many natural advantages, unlimited labor, 25 cents per hour; railroad, U. S. highways and hard-surface, farm to market, roads are available. We are in the famous Fruit and Vegetable section of the Mo. Ozarks. We want and need this industry and will be liberal in our co-operation. Address W. A. BALCH, Goodman, Mo.

INDUSTRIAL PLANTS

FOR SALE—Small modern woodworking plant, ready to operate, well located in good town, near Pinehurst. Real opportunity. Will pay for itself first year operated. Excellent reasons for selling. Terms. Investigate. No. 8061, care Manufacturers Record.

INDUSTRIAL PLANTS

FOR SALE—Sash door and millwork plant, ready to operate, well located, resident skilled labor. Liberal terms. Address R. E. CARRINGTON, Sanford, N. C.

RARE OPPORTUNITY
BALTIMORE, MD.

On main line Pennsylvania Railroad between Baltimore and Washington. Plot 8.6 acres. R. R. siding 915 feet in length. Concrete yard, with underground drainage; 5 well-constructed buildings, 14 individual garages. Very low taxes—and this is only 20 minutes' run by automobile from the center of Baltimore. B. HOWARD RICHARDS, 1109 Lexington Building, Baltimore, Md.

WAREHOUSE

FOR RENT OR SALE—120,000 square feet including warehouse and display room well located for freight, express and parcel post. Geo. T. Houston & Co., P. O. Box 803, Memphis, Tennessee.

FACTORY SITES

PLEASE READ my offer on page 116 February 6th issue and keep in mind that good factory sites are getting scarcer around the "Hub City," Spartanburg, S. C., and more especially the ones with everything so handy. Write, wire or 'phone for appointment to be shown this property. Chas. A. Pearson, Wellford, S. C.

FACTORY OR WAREHOUSE SITE on Pennsylvania Railroad, within city limits of BALTIMORE, MARYLAND, 185 ft. x 328 ft., facing on two streets and railroad. Price reasonable. Mortgage arranged if desired. B. HOWARD RICHARDS, 1109 Lexington Building, Baltimore, Md.

FOR SALE—An ideal factory site on Southern Railroad spur fronting on four streets, with artesian well in center, capacity 100 gallons per minute. City and county tax exempt for five years; labor conditions ideal. ROBERT S. ANDERSON, Hawkinsville, Ga.

INDUSTRIAL SITES

1200 acre tract available for Factory Sites in the famous Piedmont industrial belt. Tract has 2½ miles frontage on Southern Railway main line, two miles frontage on Broad River and several other streams available for water supply. Adjoins town of 2000. E. E. PORTER, 412 Independence Bldg., Charlotte, N. C.

PLANT SITE AND TOWN

Excellent plant location, southeast Georgia, on main line Central of Georgia. Village of fifty houses, with clubhouse, adjoining good, small town. Deep well, elevated water tank, pump and water lines installed. Ample labor available for textiles, metal working, wood working, paper mill, clay and ceramics or other industries. Plant site 150 acres, with switch tracks installed. Office building and general equipment available. NASHVILLE INDUSTRIAL CORPORATION, OLD HICKORY, TENNESSEE.

FACTORY BUILDINGS

BUILDING FOR SALE OR LEASE—Building 100x150 feet, equipped with freezing vaults, cooling rooms, water cooling tower, etc. Has been used as Ice, Ice Cream and Bottling plant; 50x150, two stories. Excellent location for any kind manufacturing concern. Best market entire country. For further information address JOHN PHILLIPS, Box 671, Wichita Falls, Texas.

PATENTS FOR SALE

INVENTION FOR SALE—\$5000 cash; small royalty; protected toothpaste dispenser. Write EBERT W. FAUST, R. 1 Box 17, Barnesville, Pa.

PATENT ATTORNEYS

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

PATENT ATTORNEYS

PATENTS—TRADEMARKS—COPYRIGHTS Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

EDWARD C. SASNETT, Atty. at Law, formerly a Principal Examiner in the U. S. Patent Office. I offer to inventors and manufacturers a strictly personal service based on twenty years' experience in patent work. McGill Building, Washington, D. C.

REPRESENTATIVES WANTED

WANTED—Reliable spare time workers, commission basis, for very remunerative introductory assistance in making local machine sales, etc. PAULY MFG. CO., 1333 K Northwest, Washington, D. C.

A MANUFACTURER of Expansion Joints used with pavements, bridges and all forms of concrete slab work is open to increase number of distributors and agents in certain good unassigned territory. Address No. 8057, care of Manufacturers Record.

AGENCIES WANTED

FLORIDA MANUFACTURERS AGENT—Desire to act as Manufacturer's Agent for State of Florida. Have abundant sales experience and organization ability. Married, established, 42 years old, and know the State well. Can furnish excellent references as to sales ability and standing.

O. D. LAGRANGE, Eustis, Fla.

SITUATIONS WANTED

CIVIL ENGINEER, now resident in South, desires permanent connection. Fourteen years' experience, including work on Railroads, Public Utilities, Industrial and Road construction, as well as accounting and survey work. Address No. 8053, care of Manufacturers Record, Baltimore, Md.

YOUNG MAN, 32, for past 2 years district sales manager for present connection, desires change. Will accept Louisiana-Mississippi territory at salary of \$250.00 per month and traveling expenses. What have you to offer? Can furnish best of references. Address No. 8058, care of Manufacturers Record, Baltimore, Md.

MEN WANTED

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

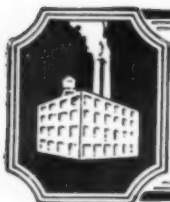
R. W. BIXBY, INC., 103 Downtown Bldg. Buffalo, New York

MACHINERY AND SUPPLIES

FOR SALE—Five to six miles of 25-pound good relaying T rails. THE PINE LUMBER COMPANY, New Bern, N. C.

FOR SALE—2—250 H.P. Return tubular boilers, 150 lbs. pressure, steel casings and Dutch oven. Also 2—180 H.P. return tubular boilers, 150 lbs. pressure, steel casings and separate stacks. Also 1—100 H.P. return tubular boiler, 150 lbs. pressure ASME. Write for FREE copy of the Machrec Want List, listing America's leading machinery bargains.

MACHINERY RECORD, Richmond, Va.



SPECIAL ADVERTISEMENTS OF GENERAL INTEREST



REPRESENTATIVE WANTED in the South

The Manufacturers Record has an opening for traveling subscription salesman. Previous experience in this line of work is not essential but a record of successful sales work and general business experience is desirable. The man we want must be of the highest character and integrity, of good education (college man preferred) and prepared to travel. Applicants are requested to write giving age, business experience, education and the names of business and character references. A photograph or snap-shot should be included.

MANUFACTURERS RECORD
Baltimore, Maryland

Industrial and Commercial Sites in and around

CHATTANOOGA, TENNESSEE

We will be glad to serve you

BROWN & CO., Inc.
#11 East 8th Street Chattanooga, Tenn.

IDEAL LOCATIONS FOR AEROPLANE PLANTS

Several fine sites for aeroplane plants in this section. It will be to the advantage of prospective builders to communicate with

J. W. McLAUCHLIN
Hoke County Raeford, N. C.

IDLE MACHINERY

can be disposed of if you tell our readers about it—rates on request.

Advertise it in the
MANUFACTURERS RECORD

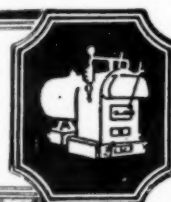


RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



150 KW SKINNER UNAFLOW UNIT

150 KW 3 Ph. 60 Cy. 2300 Volt 257 RPM General Electric TRE generator, direct connected to 15x16 Skinner Unaflo engine with 10 KW belted exciter.

EXCELLENT CONDITION

Just one of many desirable units we have available for immediate delivery. Write us on your requirements.

ROCKFORD POWER MACHINERY CO.
620-626 Sixth St. Rockford, Ill.

POWER HOUSE EQUIPMENT FOR SALE

Two Allis-Chalmers Corliss engines, two G. F. Alternators, switchboards and instruments, voltage regulator and synchronizer. One high speed automatic engine, steam pipe and valves, Leather belt. One 150 H.P. return tubular boiler with stack.

NOTTOWAY LIGHT & POWER CO.
Crewe Virginia

CORLISS ENGINE FOR SALE

18 x 36 Corliss Engine 250 H.P. Good condition. Can be seen running.

Pierpont Manufacturing Co.
Savannah, Ga.

POWER PLANT

500 KW Westinghouse Turbo Generator 2300 Volts, A. C. 3 phase 60 cycle.

3600 RPM. Complete with Crocker-Wheeler exciter, LeBlanc Improved type condenser.

Switchboard panels, accessories and voltage Regulator.

2—205 H.P. Heinie Water Tube Boilers.

1—300 H.P. Heinie Water Tube Boiler.

Address
N. R. WEISS ARRINGTON, VA.

RANDLE

OFFERS BIG BARGAINS IN

Used and Rebuilt Engine Generator Sets, Turbo Generator Sets, Motors, Rotary Converters, Generators, Motor Generator Sets, Engines, Boilers, Steam and Electric Machinery of all kinds, also Machine Tools. Send for our new machinery list. Yours for the asking. Established 50 years.

**The RANDLE
MACHINERY CO.**

1734 Powers St., Cincinnati, Ohio

OIL ENGINES Wanted and For Sale 15 to 1000 HP

Send for Bulletin Listing over 200 BARGAINS

ZELNICKER IN ST. LOUIS
Rails, Equipment, Steel Sheet Piling, Etc.

STEAM DRYER BARGAINS

10—Bartlett & Snow Steam Jacketed Agitated Reducing Kettles or Steam Dryers, 10' dia. x 8' deep. In excellent condition.

Address A-471
Care of Manufacturers Record, Baltimore, Md.

Your ADVERTISEMENT

in these pages places your facilities before the leaders in manufacturing and industrial operations in the South and Southwest, creating wider markets for your products.

Advertising rates gladly submitted upon request

MANUFACTURERS RECORD
Baltimore Maryland



SAVE MONEY ON MOTORS—

Send for our 80-page illustrated
MONTHLY BARGAIN
SHEET

listing the largest stock of
Hi-Grade-Rebuilt Motors in
America at prices that show
a Decided Saving over the
cost of new motors.

GREGORY HI-GRADE- REBUILT MOTORS

have been leaders in the re-
built motor market since
1893 and are shipped any-
where on approval.

Write, 'phone or wire

GREGORY ELECTRIC CO.

Lincoln & Sixteenth Sts., Chicago

FEED WATER HEATERS

- 1—1200 H.P. Cochrane, open type.
- 1—1000 H.P. Cochrane, open metering type.

BOILERS

- 2—500 H.P. Sterling Water Tube, 160 lb. pressure, A.S.M.E. code.
- 2—187 H.P. 78" x 18' Hor. Ret. Tub. 145 lb. pressure, A.S.M.E. code.
- 2—180 H.P. Keeler Water Tube, 200 lb. pressure, A.S.M.E. code.

METAL WORKING TOOLS

- 1—10"-12" Drill Slotter, belt driven, all power feeds.
- 1—No. 4 LeBlond Plain Miller, table 61" x 14", belt dr.
- 1—20 spindle Natio Multi-spindle drill, head 14" x 27".
- 1—2" Ames Bolt Cutter, belt drive.
- 1—19"x8' Sidney engine lathe, belt. dr. Q. C.
- 1—18"x6' Rahn Larmon, belt. dr. Q. C.
- 1—16"x8' American Eng. Lathe, belt dr. Q. C.
- 1—8' Geo. Ohi Power Squaring Shear, 3/16" cap, belt dr.
- 8 ft. Covington power squaring shear, 12 in. gap, 1/4 in. capacity.
- 8 ft. Geo. Ohi bending brake, press type, 10 gauge capacity.

THE O'BRIEN MACHINERY CO.

113 North Third Street

Philadelphia, Pa.

BOLT & PIPE MACHINES

- 2" Landis Single Head Bolt Cutter, with both bolt and pipe dies.
- 6" Williams Pipe Machine, capacity 2 1/2 to 6", inc., single pulley drive.
- 12" Williams Pipe Machine, capacity 2 1/2 to 12", inc., single pulley drive.

DRILLS

- 23" Rockford Sliding Head, B.G., tapping attach.
- 24" Cincinnati-Bickford Sliding Head, B.G., P. F.
- 26" Prentice Sliding Head, B.G., single pulley drive.
- 3' Cincinnati Bickford Radial, gear box.
- 4' Western Radial, gear box.
- No. 17 Foote-Burt Two Spindle, Adjustable Rail, No. 5 M. T.
- 20" Barnes Three Spindle, Geared Gang Drill, one spindle tapping.
- Four Spindle Henry & Wright Hi-Speed, Ball Bearing.
- Four Spindle Allen Hi-Speed, Ball Bearing.

LEBLOND GEARED HEAD LATHES

- 19"x14' Heavy Duty, arranged for motor drive, with motor.
- 21"x11' Heavy Duty, single pulley drive.

GRINDERS

- No. 14 Pratt & Whitney Vertical Surface, ball bearing spindle, with magnetic chuck.
- No. 2 Diamond Surface, capacity 36"x12"x12".
- No. 2 Cincinnati Universal, 12"x36".
- No. 1 Brown & Sharpe Universal.
- Norton Plain, 14"x36".

AIR COMPRESSORS

- 1050 cu. ft. Worthington 18" and 11"x14" Duplex, Two Stage, Feather Valve, with idler.
- 528 cu. ft. Ingersoll Rand, Class ER-1, 14"x12", with idler.
- 324 cu. ft. Ingersoll Rand, Class ER-1, 12"x10", with idler.
- 265 cu. ft. Worthington 9 1/2"x12", with idler.
- 188 cu. ft. Penna. 9"x8", with idler.

BOILERS

- 400 H.P. B. & W. Water Tube, ASME Code, 200 lbs.
- 175 H.P. 72"x20' Conestoga HRT, ASME Code, 150 lbs.
- 125 H.P. Erie City Economic, ASME Code, 150 lbs. (2).
- 100 H.P. 66"x16' Ames HRT, ASME Code, 125 lbs.
- 80 H.P. Locomotive, Mass. or N. J., 125 lbs.
- 40 H.P. Ames Empire, ASME Code, 100 lbs.

DELTA EQUIPMENT CO.

148 N. 3d Street

Philadelphia, Pa.



The **ELECTRIC SERVICE CO. Inc.**
America's Used Transformer Clearing House
212 Walnut Street
Cincinnati, Ohio



TRANSFORMERS

We Carry a stock of approximately 5000 transformers of a total capacity of about 100,000 kva., in sizes from 1 to 1000 kva. and from 110 volts to 66,000 volts.

We specialize in the rewinding and repair of transformers, any size and any specifications. All work positively the best and guaranteed as such. We will show you a saving of from 30% to 60% of the cost of new transformers!

Send for our monthly bulletin, showing complete lists of transformers on hand,
and our prices for rewinding transformers.

WE BUY MODERN TYPE TRANSFORMERS—ANY SIZE—ANY QUANTITY

Reach the Buyers

of used machinery and equipment through the

Resale Department

An advertisement in this department will help
sell machinery being replaced or no longer
needed in your plant.

Rates on Request

MANUFACTURERS RECORD

Baltimore, Md.

MOTOR BARGAINS

550 V., 3 ph., 60 cycle

- 12—100 HP., Westgh., CS, 700 RPM., complete.....\$475.00 ea.
- 1—100 HP., Gen. Elec., I-M, slip ring, 865 RPM., complete.. 650.00 ea.
- 1—100 HP., Burke Elec. EMV, slip ring, 2200 v., 900 RPM., complete..... 850.00 ea.
- 1—75 HP., Gen. Elec., I-M, slip ring, 565 RPM., complete.. 725.00 ea.
- 1—75 HP., Westgh., HF, slip ring, 860 RPM., complete.... 575.00 ea.
- 1—75 HP., Gen. Elec., I-K, 570 RPM., complete..... 475.00 ea.
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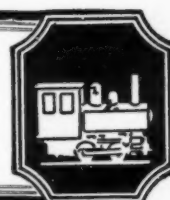
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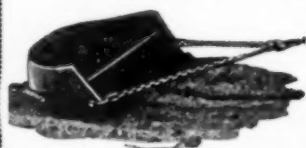
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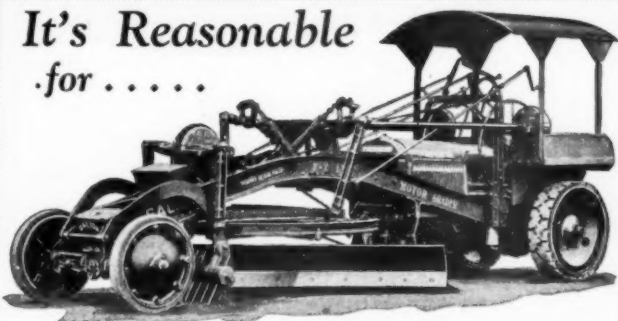
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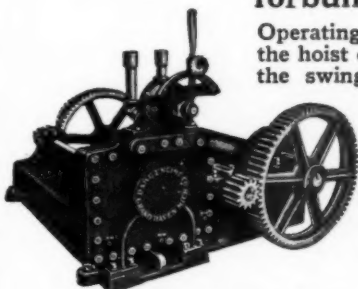


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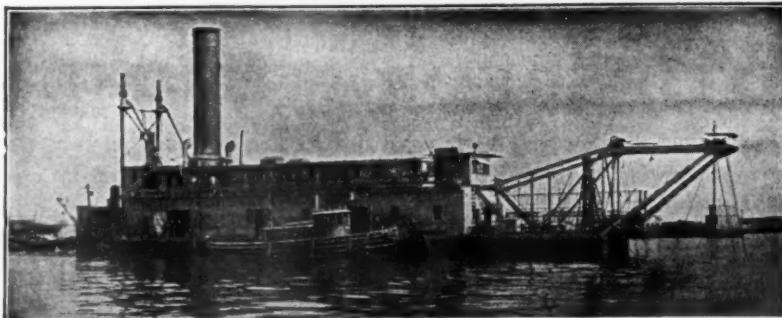
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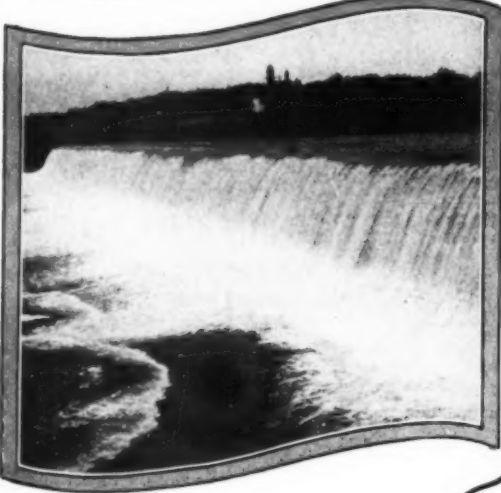
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*View of Holyoke Dam, Mass.
(Photographed late in 1928)*

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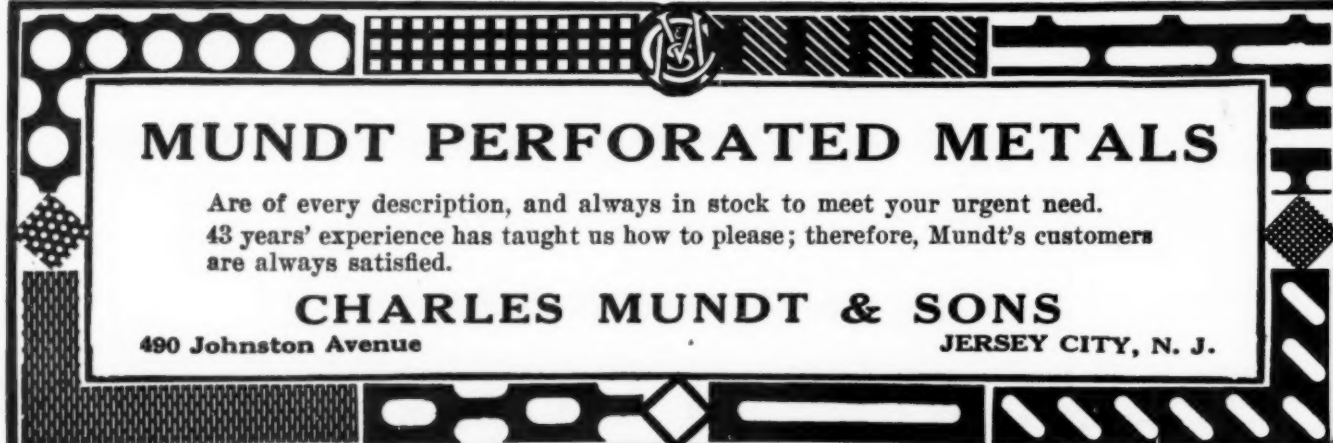
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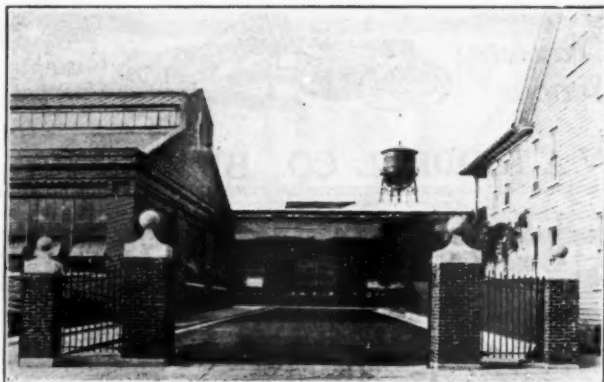


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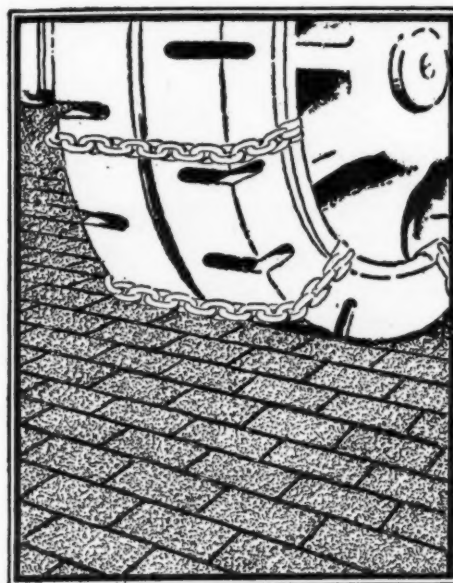
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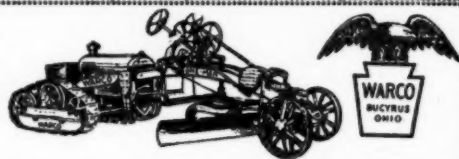
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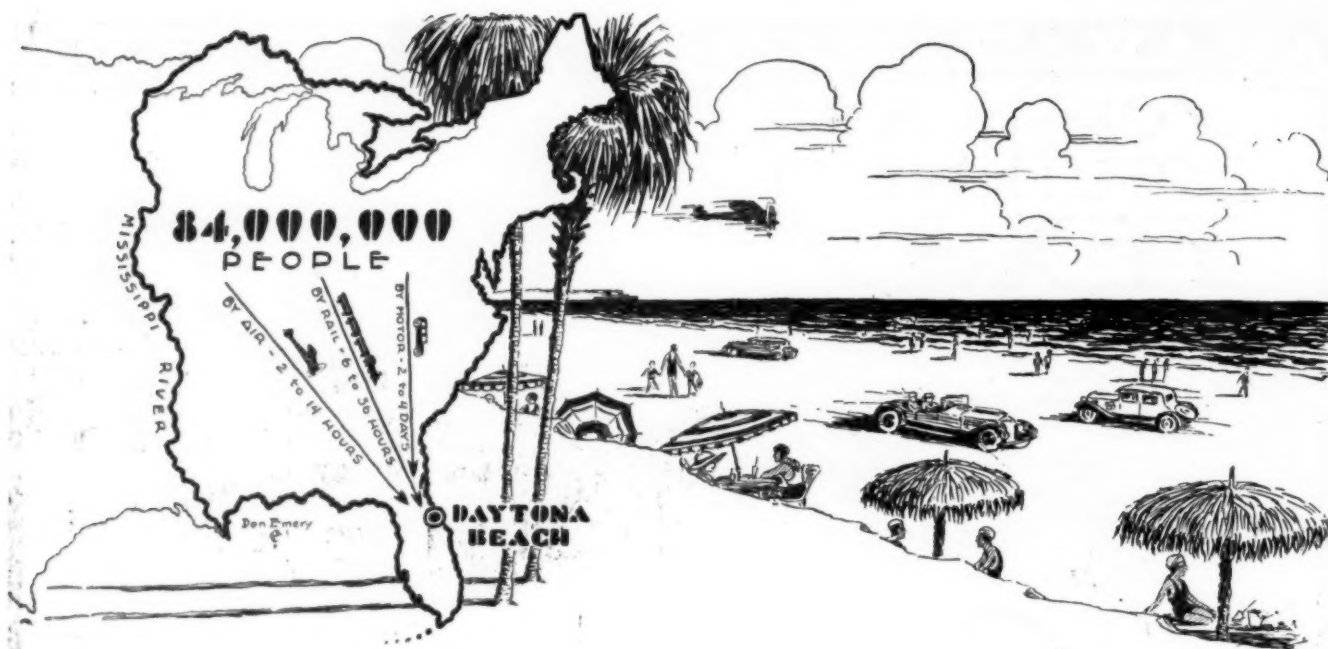
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WINTER RESORT—Daytona Beach is within 36 hours or less, by train, of more than 84,000,000 people. (2 to 14 hours by air; one to four days by motor.) Many financiers and busy executives come from distant points to week-end with their families here during the Winter Season. Nothing need be said here of the marvelously warm yet invigorating winter climate of Daytona Beach.

SUMMER RESORT—In summer it is delightfully cool and refreshing here, due to several different factors. Perhaps first among these is the almost continuous breeze that sweeps the Coast at this point. Second is the matchless Beach and its cool surf, the waters of which are never warm and enervating but bracing and exhilarating. Third and contributory to the first and second, is the fact that the Gulf Stream is thirty miles off-shore at this point, remote enough to permit the breeze and the surf to remain cool and refreshing.

Daytona Beach enjoyed, in 1929, the greatest season any summer resort in the South has ever known. Crowds unprecedented in Southern Summer Resort history flocked to the city and its world-famous beach. The easy accessibility of the city to all parts of the country and of the Beach itself to all parts of the city of which it forms an important street are contributing factors to its astounding success.

INDUSTRY AND INVESTMENT—It must be clear that the city is admirably situated for the establishment of small and medium sized industries and for the acquisition of business property. It has a population of 25,000. It is situated on the main line of the Florida East Coast Railroad. The East Coast Canal, from Jacksonville to Miami, now being deepened and widened by the United States Government, passes through the city. Daytona Beach is also a focal point in a vast network of trunk highways. Climatic conditions are perfect for all-year open-air and semi open-air labor. Amusements of such a healthful nature as surf bathing, fishing, tennis, golf, motoring and dancing make for contentment, efficiency and a healthy, normal social life.

DAYTONA BEACH FLORIDA

Chamber of Commerce
Daytona Beach, Florida

Please send me your new winter folder for 1929-1930

Chamber of Commerce
Daytona Beach, Florida

Below are the names and addresses of two friends who will be interested in information about Daytona Beach. Please send them copies of your folder.

NAME
ADDRESS

NAME
ADDRESS

NAME
ADDRESS

Classified Reference Index for Buyers

ABRASIVE MATERIALS.

Carborundum Co., Niagara Falls, N. Y.

ACCOUNTANTS (Cert. and Cost.)

Black & Co., Baltimore, Md.
Ernst & Ernst, New York, N. Y.
Le Baron, E. T., Jacksonville, Fla.

ACETYLENE GENERATORS.

Imperial Brass Mfg. Co., Chicago, Ill.
Milburn Co., The Alexander, Balto., Md.

AERIAL MAPS and SURVEYS.

Airmap Corp. of Amer., Brooklyn, N. Y.

AIR COMPRESSORS (Stationary and Portable.)

Chicago Pneumatic Tool Co., New York, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Mch. Co., Columbia, Pa.
Quincy Compressor Co., Quincy, Ill.
Sullivan Machinery Co., Chicago, Ill.
Westinghouse Traction Brake Co., Wilmerding, Pa.

AIR CONDITIONING SYSTEMS.

Clarage Fan Co., Kalamazoo, Mich.
Skinner Bros. Mfg. Co., St. Louis, Mo.
Swartwout Co., Cleveland, Ohio.

AIRPORTS.

Airport Dev. & Constr. Co., Phila., Pa.
Shaw Co., Russell B., St. Louis, Mo.

ALUMINUM BRONZE POWDER.

Aluminum Co. of Amer., Pittsburgh.

AMMONIA Valves and Fittings.

Vogt Mch. Co., Henry, Louisville, Ky.

ANCHORS (Floor & Wall.)

Bull Dog Floor Clip Co., Winterset, Iowa.

ANGLE IRON-WORKING MACHINERY.

Whitney Metal Tool Co., Rockford, Ill.

APPRAISERS.

American Appraisal Co., Milwaukee, Wis.
Conard & Buzby, Burlington, N. J.
Main, Inc., Chas. T., Boston, Mass.

ARCHITECTS.

Bond, Geo. Harwell, Atlanta, Ga.
Chase, Wm., J. J., Atlanta.
Lindley, Claude H., Jackson, Miss.
Main, Inc., Chas. T., Boston, Mass.
Milburn, Heister & Co., Wash., D. C.
Moyer Co., Tilghman, Allentown, Pa.
Preacher & Co., Inc., G. Lloyd, Atlanta.
Sirrine & Co., J. E., Greenville, S. C.
Spiker & Co., W. C., Atlanta, Ga.
Wheeler, Walter H., Minneapolis, Minn.
Wildner Engineering Co., St. Louis, Mo.

—(Golf Course, Landscape.)

Draper, E. S., Charlotte, N. C.
Kirby & Co., Raleigh, N. C.
Miller & Asso., Wendell P., Columbus, O.
Spoon & Lewis, Greensboro, N. C.

ARCHITECTS' SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

ARCHITECTURAL Iron Work.

Dietrich Brothers, Baltimore, Md.
Virginia Bridge & Iron Co., Roanoke, Va.

ARMATURE and FIELD COILS.

Chattanooga Armature Works, Chattanooga, Tenn.

ASH Removal Systems (Gates, Hoppers, Quenchers, etc.)

Allen-Sherman-Hoff Co., Phila., Pa.

—Sluicing Systems.

Allen-Sherman-Hoff Co., Phila., Pa.

—Storage Tanks (Cast Iron.)

Allen-Sherman-Hoff Co., Phila., Pa.

ASPHALT.

Gulf Refining Co., Pittsburgh, Pa.
Shell Petroleum Corp., New Orleans.

—Filler.

American Limestone Co., Knoxville, Tenn.

—Paving.

Barber Asphalt Co., Philadelphia, Pa.

—(Rock.)

Kentucky Rock Asphalt Co., Louisville, Ky.

AUDITORS.

Black & Co., Baltimore, Md.
Ernst & Ernst, New York, N. Y.
Le Baron, Ernest T., Jacksonville, Fla.

BABBITT METAL.

Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

BACKFILLERS.

Buckeye Traction Ditcher Co., Findlay, O.
Harnischfeger Corp., Milwaukee, Wis.
Parsons Co., The, Newton, Iowa.

BAGS and BAGGING (Burlap.)

Mente & Co., New Orleans.

BALLAST (Railroad.)

American Limestone Co., Knoxville, Tenn.

BANKERS and BROKERS.

Flak & Sons, Harvey, New York, N. Y.
Provident Savings Bank & Trust Co., Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BANKS and TRUST COMPANIES.

Baltimore Commercial Bank, Balto., Md.
Bank of Alabama, The, Ensley, Ala.
Bank of New York & Trust Co., N. Y.
Canal Bank & Trust Co., New Orleans.
Century Trust Co., Baltimore, Md.
Equitable Trust Co., New York, N. Y.
First and Merchants National Bank, Richmond, Va.
Maryland Trust Co., Baltimore, Md.
Mercantile Trust Co., Baltimore, Md.

BAR Benders.

Koehring Co., Milwaukee, Wis.
Waterloo Constr. Co., Waterloo, Iowa.

—Cutters.

Koehring Co., Milwaukee, Wis.

BARGES (Steel.)

American Bridge Co., New York, N. Y.
Ritter-Conley Co., Pittsburgh, Pa.

BARS (Steel, Rounds, Flats, Hexagon and Squares.)

Carnegie Steel Co., Pittsburgh, Pa.
Concrete Steel Co., New York, N. Y.
Coppers Steel Co., Birmingham, Ala.
Gulf States Steel Co., Birmingham, Ala.
Harrisburg Pipe and Pipe Bending Co., Harrisburg, Pa.
Knoxville Iron Co., Knoxville, Tenn.
Republic Iron & Steel Co., Youngstown, Ohio.
Ryerson & Son, Inc., Jos. T., St. Louis, and New York.
Sweet's Steel Corp., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Timken Roller Bearing Co., Canton, Ohio.
Virginia Bridge & Iron Co., Roanoke, Va.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

—Wire, Wire Fabric, Etc. (For Reinforced Concrete.)

National Steel Fabric Co., Pittsburgh, Pa.

BATTERIES (Storage.)

Electric Storage Battery Co., Phila., Pa.

BAUXITE ORE (Crude, Dried, Calcined.)

Dixie Bauxite Co., Sweet Home, Ark.

BEAMS, CHANNELS, ANGLES.

Belmont Iron Works, Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

BEARINGS (Anti-friction.)

Timken Roller Bearing Co., Canton, Ohio.

—(Line Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

—(Roller.)

Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., Canton, Ohio.

BELT (Chain.)

Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Leather, Canvas, Rubber.)

Baltimore Belting Co., Baltimore, Md.
Charlotte Leather Belting Co., Charlotte, N. C.
Republic Rubber Co., Youngstown, Ohio.

—Dressing.

Dixon Crucible Co., Jos., Jersey City, N. J.

—Conveyors.

Barber-Greene Co., Aurora, Ill.

BENCH LEGS

Angle Steel Stool Co., Plainwell, Mich.

—Drawers (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

BENCHES and TABLES.

(Steel.)
Angle Steel Stool Co., Plainwell, Mich.

BILLETS (Basic Open Hearth.)

Gulf States Steel Co., Birmingham, Ala.
Republic Iron & Steel Co., Youngstown, Ohio.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

BINS (Drill and Reamer.)

Angle Steel Stool Co., Plainwell, Mich.

—(Steel Loading.)

Blaw-Knox Co., Pittsburgh, Pa.
Butler Bin Co., Waukesha, Wis.
Erie Steel Construction Co., Erie, Pa.

BLASTING POWDER and Accessories.

Du Pont de Nemours & Co., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

BLINDS (Venetian and Awning.)

Wilson Corp., The J. G., New York.

BLOCKS (Chain.)

Harrington Co., The, Philadelphia, Pa.

—TACKLE for Wire and Manila Rope.

Patterson Co., W. W., Pittsburgh.

BLOWERS and Exhaust Fans.

Clarage Fan Co., Kalamazoo, Mich.
National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

BLOW PIPE SYSTEMS.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.
Skinner Bros. Mfg. Co., St. Louis, Mo.

BOILER NOZZLES.

Taylor Forge & Pipe Wks., Chicago, Ill.

BOILERS (New.)

Babcock & Wilcox Co., The, New York.
Charleston Dry Dock & Machine Co., Charleston, S. C.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., R. D., Newnan, Ga.
Combustion Engr. Corp., New York, N. Y.
Lombard Iron Works & Supply Co., Augusta, Ga.
Schofield's Sons Co., J. S., Macon, Ga.
Springfield Boiler Co., Springfield, Ill.
Titusville Iron Works Co., Titusville, Pa.
Vogt Mch. Co., Henry, Louisville, Ky.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.
Randle Machinery Co., The, Cincinnati, O.
Zelnicker Supply Co., W. A., St. Louis.

—(Water Tube.)

Springfield Boiler Co., Springfield, Ill.

BOILER SETTINGS.

Harbison-Walker Refractories Co., Pittsburg.

—Tubes.

Boiler Tube Co. of Amer'ca, Pittsburgh.
National Tube Co., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Tubes (Charcoal, Iron.)

Reading Iron Co., Reading, Pa.

BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.
Progressive Mfg. Co., Torrington, Conn.
Republic Iron & Steel Co., Youngstown, Ohio.

Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Track.)

Sweet's Steel Co., Williamsport, Pa.

BOND BUYERS.

Garraway & Co., S. G., Chicago.
Hanchett Bond Co., Inc., The, Chicago.
Law & Co., A. M., Spartanburg, S. C.
Marx & Co., Birmingham, Ala.
Mercantile Trust Co., Baltimore, Md.
Nuveen & Co., John, Chicago, Ill.
Provident Savings Bank and Trust Co., Cincinnati, Ohio.
Robinson-Humphrey Co., Atlanta, Ga.
Seasongood & Mayer, Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BORING (Core.)

Mott Core Drilling Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Henwood, Inc., Scranton, Pa.

BOXES (Paper.)

Old Dominion Box Co., Lynchburg, Va.

BRASS GOODS.

Copper and Brass Research Asso., New York.
Mueller Co., Decatur, Ill.

BRICK (Common Building.)

Friend & Co., Inc., Petersburg, Va.

—(Face.)

Alabama Clay Prod. Co., Birmingham.

—(Fire.)

Alabama Clay Prod. Co., Birmingham.
Cambria Clay Products Co., Blackfork, O.
Dee Co., Wm. E., Oak Hill, Ohio.
Taylor Sons Co., Charles, Cincinnati.

—(Vitrified, Paving.)

Natl. Paving Brick Mfrs. Asso., Washington, D. C.

—and Clayworking Machy.

Fernholtz Brick Mch. Co., St. Louis.
Steel & Sons, J. C., Statesville, N. C.

BRIDGE Operating Machinery.

Earle Gear & Machine Co., Phila., Pa.

—Timber.

Amer. Crosscutting Co., Louisville, Ky.
Industrial Lumber Co., Elizabeth, La.

BRIDGES (Concrete.)

Atlantic Bridge Co., Greensboro, N. C.

—(Creosoted Wood.)

Atlantic Bridge Co., Greensboro, N. C.

—(Steel.)

American Bridge Co., New York, N. Y.
Atlantic Bridge Co., Greensboro, N. C.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, O.
Converse Bridge & Steel Co., Chattanooga, Tenn.
Ingersoll Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Richmond Struc. Steel Co., Richmond, Va.
Virginia Bridge & Iron Co., Roanoke, Va.

BRONZE (Architectural.)

Heath Company, J. S., Waukegan, Ill.

—(Machine.)

Moccasin Brushing Co., Chattanooga, Tenn.

BUBBLERS.

Rundle-Spence Mfg. Co., Milwaukee, Wis.

BUCKETS (Clam Shell.)

Blaw-Knox Co., Pittsburgh, Pa.
Erie Steel Construction Co., Erie, Pa.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Owen Bucket Co., The, Cleveland, Ohio.

—(Dredging, Excavating, Sewer, etc.)

Erie Steel Construction Co., Erie, Pa.
Hayward Co., The, New York, N. Y.
Monaghan Mfg. Corp., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Elevator.)

Hendrick Mfg. Co., Carbondale, Pa.
Webster & Weller Mfg. Companies, Chicago, Ill.

—(Orange Peel.)

Hayward Co., The, New York, N. Y.

(Ore Handling.)

Hayward Co., The, New York, N. Y.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

BUILDERS and Contractors.

Barstow & Co., W. S., Reading, Pa.
Long Co., M. A., Baltimore, Md.
Moyer Co., Tilghman, Allentown, Pa.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
White Engineering Corp., J. G., New York.

BUILDINGS (Industrial.)

Belmont Iron Works, Philadelphia, Pa.
Blaw Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.
Maryland Metal Building Co., Balto., Md.
McClintic-Marshall Co., Pittsburgh, Pa.
Muskegon Iron Works, Muskegon, Okla.
Nashville Bridge Co., Nashville, Tenn.
Truscon Steel Co., Youngstown, Ohio.
Virginia Bridge & Iron Co., Roanoke, Va.

(Portable Sheet Metal.)

Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.
Maryland Metal Building Co., Balto., Md.

BULKHEADS.

Shore-Line Builders, Inc., Jacksonville, Fla.
Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.

Beatty Machine & Mfg. Co., Hammond, Ind.
Trackson Co., Milwaukee, Wis.

BUSHINGS (Brass and Bronze.)

Moccasin Bushing Co., Chattanooga, Tenn.

BUSINESS METHODS.

Ernst & Ernst, New York, N. Y.

CABINETS (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

CABLES (Stud Link.)

Woodhouse Chain Works, Trenton, N. J.
—and Wire (Electric.)
American Steel & Wire Co., Balto., Md.
Okonite Co., New York, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
Western Electric Co., New York City.

CABLEWAYS (Overhead Suspension.)

Broderick & Bascom Rope Co., St. Louis.
Sauerman Bros., Chicago, Ill.

CALCIUM CHLORIDE.

Grasselli Chemical Co., Inc., Birmingham, Ala.
Solvay Sales Corp., New York City.

CAN and Box-Making Machinery (Tin.)

Bliss Co., E. W., Brooklyn, N. Y.
Robins & Co., A. K., Baltimore, Md.

CANNING MACHINERY.

Robins & Co., A. K., Baltimore, Md.

CAR Loaders and Unloaders.

Barber-Greene Co., Aurora, Ill.

—Pullers.

Webster & Weller Mfg. Companies, Chicago, Ill.

CARS (Dump, Industrial, Logging and Mine.)

Atlas Car & Mfg. Co., The, Cleveland, O.
Easton Car & Construction Co., Easton, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.
—Steps (Safety.)
Irving Iron Works Co., Long Island City, N. Y.

CASTERS (Truck.)

Service Caster & Truck Co., Albion, Mich.

CASTINGS (Brass, Bronze and Aluminum.)

Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.
Moccasin Bushing Co., Chattanooga, Tenn.

—(Chilled Iron.)

Fuller Lehigh Co., Fullerton, Penna.

—(Gray Iron.)

Columbian Iron Works, Chattanooga, Tenn.
Fuller Lehigh Co., Fullerton, Penna.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
Hammond Iron Co., Birmingham, Ala.
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.
Roanoke Iron & Bridge Works, Inc., Roanoke, Va.
Salem Fdry. & Mach. Wks., Salem, Va.
U. S. Pipe & Foundry Co., Burlington, N. J.

—(Malleable Iron and Steel.)

Timken Roller Bearing Co., Canton, O.

(Semi-Steel.)

Salem Fdry. & Machine Works, Salem, Va.

(Steel.)

Bethlehem Steel Co., Bethlehem, Pa.
Crucible Steel Casting Co., Lansdowne, Delaware Co., Pa.
Deemer Steel Casting Co., New Castle, Del.
Lunkenhelmer Co., Cincinnati, Ohio.

CAUSTICIZERS.

Svenson Evaporator Co., Harvey, Ill.

CEMENT (High Temperature.)

Harbison Walker Refractories Co., Pittsburg.

—(Portland.)

Alpha Portland Cement Corp., Birmingham, Ala.
Atlas Portland Cement Co., New York.
Lehigh Portland Cement Co., New York.
Louisville Cement Co., Louisville, Ky.
Portland Cement Assn., Chicago, Ill.

—Guns.

Cement-Gun Co., Inc., Allentown, Pa.

—Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

CHAIN BLOCKS (See Blocks, Chain.)**CHAINS (Dredge, Quarry, Steam Shovel.)**

Knoxville Iron Co., Knoxville, Tenn.

—(High Speed Roller.)

Diamond Chain & Mfg. Co., Indianapolis.

—(Silent Drive.)

Diamond Chain & Mfg. Co., Indianapolis.

—(Sprocket.)

Chain Belt Co., Milwaukee, Wis.

—(Welded.)

Woodhouse Chain Works, Trenton, N. J.

CHAIRS (Opera and Theatre.)

Andrews Co., A. H., Chicago, Ill.

—and Stools (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

CHEMICALS.

Grasselli Chemical Co., Inc., Birmingham, Ala.

CHEMICAL MACHINERY.

Svenson Evaporator Co., Harvey, Ill.

CHEMICAL TOILETS.

Kaustine Co., Inc., Perry, N. Y.

CHEMISTS, CHEMICAL ENGINEERS (Analytical.)

Harrow-Agee Laboratories, Memphis, Tenn.
Flood & Co., Walter H., Chicago, Ill.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Meigs, Bassett & Slaughter, Phila., Pa.
Pleurd Laboratories, The, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.
Southern Testing Laboratories, Inc., Birmingham, Ala.
Southwestern Laboratories, Fort Worth, Texas.
Stillman & Van Sclen, New York.
Texas Testing Laboratories, San Antonio, Texas.
Willey & Co., Inc., Baltimore, Md.

—(Consulting, Paper Industry.)

Froehling & Robertson, Inc., Richmond, Va.

CHIMNEYS (Concrete.)

Rust Engineering Co., Birmingham, Ala.

—(Radial Brick.)

Rust Engineering Co., Birmingham, Ala.

CHLORIDE ACCUMULATOR.

Electric Storage Battery Co., Phila., Pa.

CHLORINATORS.

Rees, S. P., Atlanta.

CIRCUIT BREAKERS.

I. T. E. Circuit Breaker Co., Phila., Pa.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CITY AND TOWN PLANNING.

Draper, E. S., Charlotte, N. C.
Ludlow Engineers, Winston-Salem, N. C.

CLAMPS (Steel Column.)

Roos Co., H. W., Cincinnati.

CLEANERS (Metal, Waste, General.)

Oakite Products, Inc., New York, N. Y.

CLOCKS (For all purposes.)

Kaiser Klock Co., L. E., Baltimore, Md.

(Watchman's Portable.)

Davis-Paradis Watchman's Clock Corp., New York, N. Y.
Kaiser Klock Co., L. E., Baltimore, Md.

CLUTCHES (Friction.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Foots Bros. Gear and Mach. Co., Chicago.
Wood's Sons Co., T. B., Chambersburg, Pa.

COAL (Bituminous.)

Central Coal & Coke Co., Kansas City, Mo.
Hammond Iron Co., Birmingham, Ala.
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—and Ash-Handling Mch.

Allen-Sherman-Hoff Co., Phila., Pa.
Chain Belt Co., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago.
Webster & Weller Mfg. Companies, Chicago, Ill.

—Bunkers (Cast Iron.)

Allen-Sherman-Hoff Co., Phila., Pa.

—Tipples.

American Bridge Co., New York, N. Y.

COCKS (Service.)

Mercor Nordstrom Valve Co., San Francisco, Calif.

COKE.

Hammond Iron Co., Birmingham, Ala.
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

COLUMNS (Cast Iron.)

U. S. Pipe & Foundry Co., Burlington, N. J.

COMMUTATORS.

Chattanooga Armature Works, Chattanooga, Tenn.

COMPRESSORS (Gasoline Extension.)

Sullivan Machinery Co., Chicago, Ill.

CONCRETE (Accelerators.)

Solvay Sales Corp., New York City.

—Bar Benders.

Waterloo Constr. Co., Waterloo, Iowa.

—Block Machinery.

Blystone Mfg. Co., Cambridge Springs, Pa.

—Block Pallets.

Commercial Shearing & Stamping Co., Youngstown, Ohio.

—Construction (Reinforced.)

Cement-Gun Co., Inc., Allentown, Pa.

—Floor Slabs.

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—Information Only.

Portland Cement Assn., Chicago, Ill.

—Mixers.

Blystone Mfg. Co., Cambridge Springs, Pa.

—Pipe Machinery (See Pipe Machinery, Concrete.)

—Reinforcing Wire & Wire Fabric.

National Steel Fabric Co., Pittsburgh, Pa.

—Road Curing.

McEverlast, Inc., Los Angeles, Cal.

—Road Hardeners.

Solvay Sales Corp., New York City.

—Road Reinforcing Fabric.

National Steel Fabric Co., Pittsburgh, Pa.

—Roofing Tile.

American Cement Tile Mfg. Co., Pittsburgh, Pa.

CONDENSERS.

Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Manistee Iron Works Co., Manistee, Mich.
Svenson Evaporator Co., Harvey, Ill.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CONDUITS (Electric, Interior, Steel.)

Western Electric Co., New York City.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wood.)

Meredith Co., William C., Atlanta.

CONTRACTORS (Airports.)

Alport Dev. & Constr. Co., Phila.

—(Bridge.)

Kansas City Bridge Co., Kansas City, Mo.

Snare Corp., Frederick, New York.

(Drainage and Dredging.)

Arundel Corp., The, Baltimore, Md.

(Electrical.)

Industrial Electrical Co., Savannah, Ga.
Walker Electrical Co., Atlanta, Ga.
Webb Electric Co., Anderson, S. C.

(Foundations and Dams.)

Calligan & Co., A. H., Richmond, Va.

(General.)

Angle-Blackford Co., Greensboro, N. C.

Blair, Algernon, Montgomery, Ala.

Charleston Constructors, Inc., Charleston, S. C.

Cornell-Young Co., Inc., Macon, Ga.

Felix, Alvin F., Birmingham, Ala.

Fiske-Carter Constr. Co., Greenville, S. C.

Gridley Constr. Co., Lee A., Knoxville, Tenn.

Saville, Inc., Allen J., Richmond, Va.

Seaboard & Southern Constr. Co., Inc., Jacksonville, Fla.

Snare Corp., Frederick, New York, N. Y.

Stone & Webster, Inc., Boston, Mass.

Thompson & Bros., T. C., Charlotte, N. C.

Tucker & Laxton, Charlotte, N. C.

White Engineering Corp., J. G., New York.

—Industrial Railroad Sidings.

Felix, Alvin F., Birmingham, Ala.

—Mill Village.

Hornbuckle Contracting Co., Atlanta, Ga.

—(Plastering.)

Gomez & Co., P. L., Atlanta, Ga.

Jennings & Co., Floyd, Atlanta, Ga.

—(Power Plants.)

Snare Corp., Frederick, New York, N. Y.

—(Railroad.)

Calligan & Co., A. H., Richmond, Va.

Cornell-Young Co., Inc., Macon, Ga.

—(Reinforced Concrete.)

Blair, Algernon, Montgomery, Ala.

Cement Gun Construction Co., Chicago.

Guntie Gun & Constr. Co., Kansas City.

Long Co., The, M. A., Baltimore, Md.

Seaboard & Southern Constr. Co., Inc., Jacksonville, Fla.

Tucker & Laxton, Charlotte, N. C.

—(Road and Street Paving.)

Fiske-Carter Constr. Co., Greenville, S. C.

Gridley Constr. Co., Lee A., Knoxville, Tenn.

Hornbuckle Contracting Co., Atlanta, Ga.

McCrary Co., The J. B., Atlanta, Ga.

McCrory Co., The J. B., Atlanta, Ga.

Snare Corp., Frederick, New York, N. Y.

Tucker & Laxton, Charlotte, N. C.

—(Swimming Pool.)

Rees, S. P., Atlanta, Ga.

—(Water-Works.)

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

—Machinery and Supplies.

(New.)

Bay City Shovels, Inc., Bay City, Mich.

Erie Steel Construction Co., Erie, Pa.

Weller & Co., Birmingham, Ala.

W-K-M Co., Inc., Houston, Texas.

—Machinery and Supplies.

(Used.)

Clapp, Riley & Hall Equip. Co., Chicago, Ill.

Equip. Sales & Rentals Co., Pittsburgh.

Grey Steel Products Co., New York.

Guion, Harry P., New York, N. Y.

Johnson & Hoelzer, Fernwood, Pa.

Marine Metal & Supply Co., New York.

CONTRACT WORK WANTED.

(See following classifications:)

Boiler and Tank Works.

Castings.

Forgings.

Foundry and Machine Shops.

Machinery (Special.)

Ornamental Iron Work.

Patterns.

Sheet Metal Work.

Structural Steel and Iron.

Welding Plants.

COPPER AND BRASS.

Copper and Brass Research Assn., New York.

COST SERVICE.

Le Baron, E. T., Jacksonville, Fla.

COTTON GIN MACHINERY.

Continental G. N. Co., Birmingham, Ala.

MILL MACHINERY.

Southern Spindle & Flyer Co., Inc., Charlotte, N. C.

COUPLINGS.Goldens' Fdy. & Mach. Co., Columbus, Ga.
Harrisburg Pipe and Pipe Bending Co., Harrisburg, Pa.**—(Shaft.)**Foots Bros. Gear & Machine Co., Chicago.
Wood's Sons Co., T. B., Chambersburg, Pa.**CRANES.**Buckeye Traction Ditcher Co., Findlay, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.**—(Crawler.)**Buckeye Traction Ditcher Co., Findlay, O.
Harnischfeger Corp., Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.**—(Crawling Tractor.)**Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.**—(Electric Traveling.)**Erie Steel Constr. Co., Erie, Pa.
Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.**—(Full Circle Steam and Electric.)**Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.**—(Gasoline.)**Buckeye Traction Ditcher Co., Findlay, O.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.**—(Locomotive.)**Bucyrus-Erie Co., Erie, Penna.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.**—(Material Handling.)**Bay City Shovel, Inc., Bay City, Mich.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Universal Crane Co., Lorain, Ohio.**—(Portable Floor.)**

Beatty Machine & Mfg. Co., Hammond, Ind.

—(Traveling, Hand Power.)

Harrington Co., The, Philadelphia, Pa.

CRAWLERS (Tractor.)Riddell Co., W. A., Bucyrus, Ohio.
Trackson Co., Milwaukee, Wis.**CREOSOTED MATERIALS.**Amer. Creosote Wks., Inc., New Orleans.
Ayer & Lord Tie Co., Inc., Chicago.
Savannah Creosoting Co., Savannah, Ga.**CREOSOTE OIL.**Amer. Creosote Wks., Inc., New Orleans.
Ayer & Lord Tie Co., Inc., Chicago.**CREOSOTING (Wood Materials.)**Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Eppinger & Russell Co., New York, N. Y.
Gulf States Creos. Co., Hattiesburg, Miss.
Pretzman & Sons, J. F., Charleston, S. C.
Savannah Creosoting Co., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.
Walles Wood-Preserving Co., Norfolk, Va.**CROSS-ARMS (Creosoted.)**Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Savannah Creosoting Co., Savannah, Ga.**—(Zinc Meta Arsenite Treated.)**

Curtin-Howe Corp., New York, N. Y.

CROSS-TIES (Creosoted.)Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Eppinger & Russell Co., New York, N. Y.
Pretzman & Sons, J. F., Charleston, S. C.
Savannah Creosoting Co., Inc., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.**—(Zinc Meta Arsenite Treated.)**

Curtin-Howe Corp., New York, N. Y.

CRUSHED STONE (Road Concrete and Ballast.)American Limestone Co., Knoxville, Tenn.
Boxley & Co., W. W., Roanoke, Va.**CRUSHERS (Coal and Coke.)**

Fuller Lehigh Co., Fullerton, Pa.

—Rock.

Universal Crusher Co., Cedar Rapids, Iowa.

CRUSHING and Pulverizing Machinery.Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Fuller Lehigh Co., Fullerton, Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulverizer Co., Chicago, Ill.
Sturtevant Mill Co., Boston, Mass.
Universal Crusher Co., Cedar Rapids, Iowa.
W-K-M Co., Inc., Houston, Texas.**CULVERT PIPE (Cast Iron.)**Amer. Cast Iron Pipe Co., Birmingham.
Cast Iron Pipe Research Assn., Chicago.
Gallon Iron Works & Mfg. Co., Gallon, O.
U. S. Pipe & Foundry Co., Burlington, N. J.**—(Corrugated Metal.)**American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armed Culvert Mfrs. Assn., Middletown, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Dixie Culvert Mfg. Co., Little Rock, Ark.
Gallon Iron Works & Mfg. Co., Gallon, O.
Louisiana Corr. Culvert Co., Baton Rouge, La.
Tenn. Metal Culvert Co., Nashville, Tenn.
Western Metal Mfg. Co., Houston, Texas.**CURB PROTECTORS (Steel Bars.)**Concrete Steel Co., New York, N. Y.
National Steel Fabric Co., Pittsburgh, Pa.
Truscon Steel Co., Youngstown, O.**CUTTERS (Wire Rope.)**

Leschen & Sons Rope Co., A., St. Louis.

CUTTING COMPOUNDS.

Oakite Products, Inc., New York, N. Y.

CYLINDERS (Compressed Air, Gas.)Harrisburg Pipe and Pipe Bending Co., Harrisburg, Pa.
Janney, Jr., Jos. A., Phila., Pa.
National Tube Co., Pittsburgh, Pa.**DERRICKS and Derrick Fittings.**Clyde Iron Works Sales Co., Duluth, Minn.
Sasgen Derrick Co., Chicago, Ill.**DESKS (School.)**

Andrews Co., A. H., Chicago, Ill.

—(Steel Factory.)

Angle Steel Stool Co., Plainwell, Mich.

DIFFUSERS.

Swenson Evaporator Co., Harvey, Ill.

DIGESTERS.

Swenson Evaporator Co., Harvey, Ill.

DITCHING MACHINERY.Barber-Greene Co., Aurora, Ill.
Bay City Shovel, Inc., Bay City, Mich.
Buckeye Traction Ditcher Co., Findlay, O.
Harnischfeger Corp., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Owen Bucket Co., The, Cleveland, O.
Parsons Co., Newton, Iowa.**DOORS (Fire.)**

Merchant & Evans Co., Philadelphia, Pa.

Richards-Wilcox Mfg. Co., Aurora, Ill.

—(Fireproof, Air Chamber.)

Wilson Corp., The, J. G., New York.

—(Freight Elevator.)

Peelle Co., The, Brooklyn, N. Y.

—(Furnace Inspection.)

Springfield Boiler Co., Springfield, Ill.

—(Kalamain.)

Moeschl-Edwards Corr. Co., Cincinnati.

—(Rolling, Steel and Wood.)Kinnear Mfg. Co., The, Columbus, Ohio.
Mahon Co., R. C., Detroit, Mich.
Moeschl-Edwards Corr. Co., Cincinnati.
Peelle Co., The, Brooklyn, N. Y.
Wilson Corp., The, J. G., New York.**—(Steel.)**Detroit Steel Products Co., Detroit, Mich.
Truscon Steel Co., Youngstown, O.**DRAFTSMEN'S SUPPLIES.**

Weber Co., Inc., F., Philadelphia, Pa.

DRAGLINE EXCAVATORS.Bucyrus-Erie Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Koehring Co., Milwaukee, Wis.
Monaghan Mfg. Corp., Chicago, Ill.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Sauermaier Bros., Chicago, Ill.
Thew Shovel Co., The, Lorain, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.**DREDGES (Dipper, Elevator, Hydraulic.)**Bay City Shovel, Inc., Bay City, Mich.
Bucyrus-Erie Co., Erie, Pa.
Ellicott Machine Corp., Baltimore, Md.
Morris Machine Wks., Baldwinville, N. Y.**DREDGING (River and Harbor Improvement.)**Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.**—Machinery.**American Steel Dredge Co., Fort Wayne, Ind.
Ellicott Machine Corp., Baltimore, Md.
Hayward Co., The, New York.**DRILLING CONTRACTORS.**Mott Core Drilling Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Henwood, Inc., Scranton, Pa.**DRILLS (Artesian Well.)**

Virginia Machinery & Well Co., Inc., Richmond, Va.

—(Electric.)Chicago Pneumatic Tool Co., New York.
Independent Pneumatic Tool Co., Chicago.
Sullivan Mch. Co., Chicago.**—(Pneumatic.)**Chicago Pneumatic Tool Co., New York.
Independent Pneumatic Tool Co., Chicago.
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.**DRINKING FOUNTAINS.**

Rundie-Spence Mfg. Co., Milwaukee, Wis.

DROP-FORGING MACHINERY.

Bliss Co., E. W., Brooklyn, N. Y.

DRYERS (Gravel and Sand.)

Ripley Fdy. & Mch. Co., Ripley, Ohio.

DRY KILNS and Equipment.

Moore Dry Kiln Co., Jacksonville, Fla.

DRYING MACHINERY.

American Process Co., New York, N. Y.

DUMP TRUCK BODIES and HOISTS.Commercial Shearing & Stamping Co., Youngstown, Ohio.
Eason Car & Construction Co., Easton, Pa.
Lee Trailer & Body Co., Inc., Plymouth, Ind.**DUSTPROOFING (Concrete.)**Solvay Sales Corp., New York City.
Sonnenborn Sons, Inc., L., New York.**DYESTUFFS.**

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

DYNAMITE (Industrial and Agricultural.)Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.**ELECTRICAL Instruments and Supplies.**Adams Electric Co., Frank, St. Louis.
General Electric Co., Schenectady, N. Y.
Western Electric Co., New York City.**—Machinery (Generators, Motors, etc., New.)**Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Elliott, Howard C., Miami, Fla.
Fairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Rockford Power Machy. Co., Rockford, Ill.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.**—Machinery (Generators, Motors, etc., Used.)**Belyea Co., Inc., New York City.
Delta Equipment Co., Philadelphia, Pa.
Electric Service Co., Cincinnati, Ohio.
Electrical Equip. Co., Raleigh, N. C.
Gregory Electric Co., Chicago.
Nashville Industrial Corp., Old Hickory, Tenn.
Nussbaum & Co., V. M., Ft. Wayne, Ind.
O'Brien Machinery Co., The, Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.
Rockford Power Machy. Co., Rockford, Ill.
Stewart Elec. Co., John A., Cincinnati.**—Machinery Repairing (Motors, Generators, etc.)**Chattanooga Armature Works, Chattanooga, Tenn.
Electric Service Co., Cincinnati, Ohio.
Gregory Electric Co., Chicago.**ELECTRIC LIGHTING.**

General Electric Vapor Lamp Co., Hoboken, N. J.

ELECTRIC SHOVELS (See Shovels.)**ELEVATOR Cables.**

Leschen & Sons Rope Co., A., St. Louis.

—Enclosures.

Dufur, Baggott & Co., Baltimore, Md.

—(Equalizers.)

Evans Elevator Equalizer Co., Bedford, Ind.

ELEVATORS (Electric.)American Elevator & Machine Co., Inc., Louisville, Ky.
Miller Co., St. Louis, Mo.
Moffatt Mch. Mfg. Co., Charlotte, N. C.
Warsaw Elevator Co., Baltimore, Md.**—(Hand and Belt Power.)**American Elevator & Machine Co., Inc., Louisville, Ky.
Miller Co., St. Louis, Mo.
Moffatt Mchry. Mfg. Co., Charlotte, N. C.
Warsaw Elevator Co., Baltimore, Md.**—(Hydraulic.)**American Elevator & Machine Co., Inc., Louisville, Ky.
Moffatt Mchry. Mfg. Co., Charlotte, N. C.
Warsaw Elevator Co., Baltimore, Md.**—(Portable.)**

O. K. Clutch & Machy. Co., Columbia, Pa.

ENGINEERS (Airports.)Airport Dev. & Constr. Co., Phila., Pa.
Jenny, L. Alfred, Dumont, N. J.
Miller & Asso., Wendell P., Chicago, Ill.
Shaw Co., Russell B., St. Louis, Mo.
Showalter-Associates, Inc., Detroit.**—(Appraisal.)**American Appraisal Co., Milwaukee, Wis.
Bartlett Engrs., Inc., Terrell, San Antonio, Texas.Battey & Kipp, Inc., Chicago, Ill.
Fay, Spofford & Thorndike, Boston, Mass.
Ford, Bacon & Davis, Inc., New York.

Gannett, Seelye & Fleming, Inc., Harrisburg, Pa.

Jenny, L. Alfred, Dumont, N. J.

Lockwood Greene Engrs., Inc., New York City.

Ludlow Engineers, Winston-Salem, N. C.

Main, Inc., Chas. T., Boston, Mass.

Sanderson & Porter, New York, N. Y.

Strite, F. S., New York City.

Wadleigh & Bailey, Washington, D. C.

White Engineering Corp., J. G., New York.

Wiedeman and Singleton, Inc., Atlanta.

Williamson, Lee H., Charlottesville, Va.

—(Aviation.)Airport Dev. & Constr. Co., Phila., Pa.
Miller & Asso., Wendell P., Chicago, Ill.
Shaw Co., Russell B., St. Louis, Mo.
Showalter-Associates, Inc., Detroit.**—(Bridge.)**Atlantic Bridge Co., Greensboro, N. C.
Billingsley, James W., New Orleans, La.
Fay, Spofford & Thorndike, Boston, Mass.
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hardaway Contracting Co., Columbus, Ga.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.

Howerton Engineering Co., Asheville, N. C.

Steel & Leiby, Knoxville, Tenn.

Turner, C. A. P., Minneapolis, Minn.

Virginia Bridge & Iron Co., Roanoke, Va.

Wheeler, Walter H., Minneapolis, Minn.

—(Chemical.)

Barrow-Agee Laboratories, Memphis, Tenn.

Dow & Smith, New York, N. Y.

Flood & Co., Walter H., Chicago, Ill.

Picard Laboratories, Birmingham, Ala.

Pittsburgh Testing Laboratories, Pittsburgh, Pa.

Southern Testing Lab., Inc., Birmingham.

Texas Testing Laboratories, San Antonio, Texas.

—(Civil.)

Airmap Corp. of Amer., Brooklyn, N. Y.

Batterly & Kipp, Inc., Chicago, Ill.

Charlton & Davis, Ft. Lauderdale, Fla.

Fuller & McClintock, New York, N. Y.

Gardner & Howe, Memphis, Tenn.

Greiner & Co., J. E., Baltimore, Md.

Harrub Engr. Co., C. N., Nashville, Tenn.

Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.

Hills Co. George B., Jacksonville, Fla.

Main, Inc., Chas. T., Boston, Mass.

McCready Co., John, Charleston, S. C.

Piatt, William M., Durham, N. C.

Ruggles, Inc., Charles H., West Palm Beach, Fla.

Spoon & Lewis, Greensboro, N. C.

Steel & Leiby, Knoxville, Tenn.

White Engr. Corp., J. G., New York.

—(Consulting.)

Airmap Corp. of Amer., Brooklyn, N. Y.

Barstow & Co., W. S., Reading, Pa.

Biggs Engr. Co., W. E., Knoxville, Tenn.

Charlton & Davis, Ft. Lauderdale, Fla.

Converse & Co., J. B., Mobile, Ala.

Engineering Service Corp., Houston, Tex.

Harris, L. F., Chicago.

Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.

Herty, Charles H., New York City.

Lockwood Greene Engrs., Inc., New York City.

Main, Inc., Chas. T., Boston, Mass.

McCready Co., John, Charleston, S. C.

Ophuls & Hill, Inc., New York, N. Y.

Pennington, J. B., Carson City, Nev.

Ruggles, Inc., Charles H., West Palm Beach, Fla.

Smith, Elroy G., Augusta, Ga.

Stillman & Van Sien, New York, N. Y.

Strite, F. S., New York City.

Wadleigh & Bailey, Washington, D. C.

White Engineering Corp., J. G., New York.

Wiedeman & Singleton, Inc., Atlanta, Ga.

Williamson, Lee H., Charlottesville, Va.

(Dams.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Battey & Kipp, Inc., Chicago, Ill.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Cooper & Co., Hugh L., New York, N. Y.
 Floyd & Lechridge, Dallas, Texas.
 Gardner & Howe, Memphis, Tenn.
 Hardaway Contracting Co., Columbus, Ga.
 Harza, L. F., Chicago.
 Hedrick Inc., Ira G., Hot Springs Nat'l. Park, Ark.
 Lee, William S., Charlotte, N. C.
 Main, Inc., Chas. T., Boston, Mass.
 Serrine & Co., J. E., Greenville, S. C.
 Tucker & Laxton, Charlotte, N. C.
 Wheeler, Walter H., Minneapolis, Minn.
 White Engr. Corp., J. G., New York.

(Drainage and Irrigation.)

Floyd & Lechridge, Dallas, Texas.
 Ford, Bacon & Davis, Inc., New York.
 Fuller & McClintock, New York, N. Y.
 Hills Co., George B., Jacksonville, Fla.
 Ludlow Engineers, Winston-Salem, N. C.

(Efficiency.)

Barstow & Co., W. S., Reading, Pa.
 Ernst & Ernst, New York, N. Y.

(Electrical.)

Battey & Kipp, Inc., Chicago, Ill.
 Christian, Walter P., Greensboro, N. C.
 Cooper & Co., Hugh L., New York, N. Y.
 Engineering Service Corp., Houston, Texas.
 Hooser Engineering Co., Chicago, Ill.
 Lee, William S., Charlotte, N. C.
 Lockwood Greene Engrs., Inc., New York City.
 Main, Inc., Chas. T., Boston, Mass.
 Mullergren, Arthur L., Kansas City, Mo.
 Sanderson & Porter, New York, N. Y.
 Stone & Webster, Inc., Boston, Mass.
 Tucker & Laxton, Charlotte, N. C.
 Webb Electric Co., Anderson, S. C.
 White Co., Gilbert C., Durham, N. C.
 Wiley & Wilson, Lynchburg, Va.

(Electric-Light and Power Plants.)

Barrows, H. K., Boston, Mass.
 Battey & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Cooper & Co., Hugh L., New York, N. Y.
 Ford, Bacon & Davis, Inc., New York.
 Lee, William S., Charlotte, N. C.
 Long Co., The M. A., Baltimore, Md.
 Main, Inc., Chas. T., Boston, Mass.
 Mullergren, Arthur L., Kansas City, Mo.
 Sanderson & Porter, New York, N. Y.
 Scofield Engineering Co., Phila., Pa.
 Stone & Webster, Inc., Boston, Mass.
 Tucker & Laxton, Charlotte, N. C.
 White Engineering Corp., J. G., New York.
 White Co., Gilbert C., Durham, N. C.

(Flood Control.)

Floyd & Lechridge, Dallas, Texas.
 Harza, L. F., Chicago.

(Gas.)

Byllesby Engineering and Management Corp., Chicago, Ill.
 Ford, Bacon & Davis, Inc., New York.

(Geological.)

De Kalb, Courtenay, New York City.
 Froehling & Robertson, Richmond, Va.
 Wadleigh & Bailey, Washington, D. C.

(Harbor Improvements.)

Billingsley, James W., New Orleans, La.
 Engineering Service Corp., Houston, Texas.
 Fay, Spofford & Thorndike, Boston, Mass.

(Heating.)

Battey & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Wiley & Wilson, Lynchburg, Va.

(Hydraulic.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Barrows, H. K., Boston, Mass.
 Floyd & Lechridge, Dallas, Texas.
 Fuller & McClintock, New York, N. Y.
 Harza, L. F., Chicago.
 Main, Inc., Chas. T., Boston, Mass.

(Hydro-electric.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Barrows, H. K., Boston, Mass.
 Battey & Kipp, Inc., Chicago, Ill.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Cooper & Co., Hugh L., New York, N. Y.
 Harza, L. F., Chicago.
 Lee, William S., Charlotte, N. C.
 Ludlow Engineers, Winston-Salem, N. C.
 Main, Inc., Chas. T., Boston, Mass.
 Mees & Mees, Charlotte, N. C.
 Platt, William M., Durham, N. C.
 Sanderson & Porter, New York, N. Y.
 Scofield Engineering Co., Phila., Pa.
 Serrine & Co., J. E., Greenville, S. C.
 Tucker & Laxton, Charlotte, N. C.
 White Engineering Corp., J. G., New York.

(Ice and Refrigerating.)

Engineering Service Corp., Houston, Texas.
 Ophuls & Hill, Inc., New York, N. Y.
 Strite, F. S., New York City.

(Industrial Plants.)

Barstow & Co., W. S., Reading, Pa.
 Bartlett Engrs., Inc., Terrell, San Antonio, Texas.
 Battey & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Billingsley, James W., New Orleans, La.
 Charleston Constructors, Inc., Charleston, S. C.
 Consoer, Older & Quinlan, Inc., Chicago.
 Converse & Co., J. B., Mobile, Ala.
 Fay, Spofford & Thorndike, Boston, Mass.

Gannett, Seelye & Fleming, Inc., Harrisburg, Pa.
 Gardner & Howe, Memphis, Tenn.
 Greiner & Co., J. E., Baltimore, Md.
 Herty, Charles H., New York City.
 Hills Co., George B., Jacksonville, Fla.
 Lockwood Greene Engrs., Inc., New York City.

Long Co., The M. A., Baltimore, Md.
 Main, Inc., Chas. T., Boston, Mass.
 Mees & Mees, Charlotte, N. C.
 Morgan Constr. Co., Worcester, Mass.
 Mullergren, Arthur L., Kansas City, Mo.
 Ophuls & Hill, Inc., New York, N. Y.
 Preacher & Co., Inc., G. Lloyd, Atlanta.
 Sanderson & Porter, New York, N. Y.
 Scofield Engineering Co., Phila., Pa.
 Serrine & Co., J. E., Greenville, S. C.
 Smith, Elroy G., Augusta, Ga.
 Stone & Webster, Inc., Boston, Mass.
 Turner, C. A. P., Minneapolis, Minn.
 Widmer Engineering Co., St. Louis, Mo.
 Williamson, Lee H., Charlottesville, Va.

(Industrial Survey.)

Converse & Co., J. B., Mobile, Ala.
 Herty, Charles H., New York City.
 Lockwood Greene Engrs., Inc., New York City.
 Pace Co., The, Chicago.
 Wadleigh & Bailey, Washington, D. C.

(Inspection and Tests.)

Barrow-Ages Laboratories, Memphis, Tenn.
 Conard & Buzby, Burlington, N. J.
 Dow & Smith, New York, N. Y.
 Flood & Co., Walter H., Chicago, Ill.
 Froehling & Robertson, Inc., Richmond, Va.
 Hunt Co., Robert W., Chicago, Ill.
 Picard Laboratories, Birmingham, Ala.
 Pittsburgh Testing Laboratories, Pittsburgh, Pa.
 Southern Testing Laboratories, Inc., Birmingham, Ala.
 Southwestern Laboratories, Ft. Worth, Texas.
 Spiker & Co., W. C., Atlanta, Ga.
 Texas Testing Laboratories, San Antonio, Texas.

(Landscapes.)

Draper, E. S., Charlotte, N. C.
 Kirby & Co., Raleigh, N. C.
 McCrady Co., John, Charleston, S. C.
 Showalter-Associates, Inc., Detroit.

(Lighting.)

Battey & Kipp, Inc., Chicago, Ill.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Ford, Bacon & Davis, Inc., New York.
 General Electric Vapor Lamp Co., Hoboken, N. J.
 Wiley & Wilson, Lynchburg, Va.

(Mechanical.)

Battey & Kipp, Inc., Chicago, Ill.
 Charlton & Davis, Ft. Lauderdale, Fla.
 Engineering Service Corp., Houston, Texas.
 Invicta Engineering Co., Birmingham, Ala.
 Lee, William S., Charlotte, N. C.
 Lockwood Greene Engrs., Inc., New York City.
 Main, Inc., Chas. T., Boston, Mass.
 Mees & Mees, Charlotte, N. C.
 Meigs, Bassett & Slaughter, Phila., Pa.
 Sanderson & Porter, New York, N. Y.
 Wiley & Wilson, Lynchburg, Va.

(Mining. See Engineers, Geological.)**(Municipal.)**

Bartlett Engrs., Inc., Terrell, San Antonio, Texas.
 Billingsley, James W., New Orleans, La.
 Consoer, Older & Quinlan, Inc., Chicago.
 Dow & Smith, New York, N. Y.
 Gannett, Seelye & Fleming, Inc., Harrisburg, Pa.
 Harrib Engr. Co., C. N., Nashville, Tenn.
 Hills Co., George B., Jacksonville, Fla.
 Howerton Engineering Co., Asheville, N. C.
 Knowles, Inc., Morris, Pittsburgh, Pa.
 Ludlow Engineers, Winston-Salem, N. C.
 McCrady Co., The J. B., Atlanta, Ga.
 Spoon & Lewis, Greensboro, N. C.
 White Co., Gilbert C., Durham, N. C.

(Paving and Roads.)

Billingsley, James W., New Orleans, La.
 Dow & Smith, New York, N. Y.
 Freeland, Roberts & Co., Nashville, Tenn.
 Harrib Engr. Co., C. N., Nashville, Tenn.
 Howerton Engineering Co., Asheville, N. C.
 Ludlow Engineers, Winston-Salem, N. C.
 Platt, William M., Durham, N. C.
 Spoon & Lewis, Greensboro, N. C.
 White Co., Gilbert C., Durham, N. C.

(Production.)

Scofield Engr. Co., Phila., Pa.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Cooper & Co., Hugh L., New York, N. Y.
 Ford, Bacon & Davis, Inc., New York.
 Fuller & McClintock, New York, N. Y.
 Gannett, Seelye & Fleming, Inc., Harrisburg, Pa.
 Knowles, Inc., Morris, Pittsburgh, Pa.
 Main, Inc., Chas. T., Boston, Mass.
 Sanderson & Porter, New York, N. Y.
 Scofield Engineering Co., Phila., Pa.
 Stone & Webster, Inc., Boston, Mass.
 White Engineering Corp., J. G., New York.

(Railroad.)

Jenny, L. Alfred, Dumont, N. J.
 Mees & Mees, Charlotte, N. C.

(Reinforced Concrete Bridges, Buildings, etc.)

Atlantic Bridge Co., Greensboro, N. C.

Battey & Kipp, Inc., Chicago, Ill.
 Fay, Spofford & Thorndike, Boston, Mass.
 Freeland, Roberts & Co., Nashville, Tenn.
 Gardner & Howe, Memphis, Tenn.
 Greiner & Co., J. E., Baltimore, Md.
 Lockwood Greene Engrs., Inc., New York City.

Long Co., The M. A., Baltimore, Md.
 Main, Inc., Chas. T., Boston, Mass.
 Spiller & Co., W. C., Atlanta, Ga.
 Steel & Leiby, Knoxville, Tenn.
 Tucker & Laxton, Charlotte, N. C.
 Turner, C. A. P., Minneapolis, Minn.
 Wheeler, Walter H., Minneapolis, Minn.

(Research and Development.)

Invicta Engineering Co., Birmingham, Ala.

(Sanitary.)

Harza, L. F., Chicago.

(Sea Walls.)

Ruggles, Charles H., Inc., West Palm Beach, Fla.

(Sewage Disposal Plants.)

Fuller & McClintock, New York, N. Y.
 Kaustine Co., Inc., Perry, N. Y.
 Ludlow Engineers, Winston-Salem, N. C.
 McCrady Co., The J. B., Atlanta, Ga.
 Platt, William M., Durham, N. C.
 Wiedeman and Singleton, Inc., Atlanta.

(Sewerage and Waterworks.)

Barrows, H. K., Boston, Mass.
 Conard & Buzby, Burlington, N. J.
 Consoer, Older & Quinlan, Inc., Chicago.
 Ford, Bacon & Davis, Inc., New York.
 Fuller & McClintock, New York, N. Y.
 Hardaway Contracting Co., Columbus, Ga.
 Harrib Engr. Co., C. N., Nashville, Tenn.
 Hills Co., George B., Jacksonville, Fla.
 Howerton Engineering Co., Asheville, N. C.
 Knowles, Inc., Morris, Pittsburgh, Pa.
 Ludlow Engineers, Winston-Salem, N. C.
 Mees & Mees, Charlotte, N. C.
 Pennington, J. B., Carson City, Nev.
 Platt, William M., Durham, N. C.
 Sanderson & Porter, New York, N. Y.
 Spoon & Lewis, Greensboro, N. C.
 Tucker & Laxton, Charlotte, N. C.
 White Co., Gilbert C., Durham, N. C.
 White Engineering Corp., J. G., New York.

(Sewerage and Waterworks.)

Wiedeman & Singleton, Inc., Atlanta, Ga.
 Williamson, Lee H., Charlottesville, Va.

(Structural.)

Bartlett Engrs., Inc., Terrell, San Antonio, Texas.
 Freeland, Roberts & Co., Nashville, Tenn.
 Hedrick, Inc., Ira G., Hot Springs Nat'l. Park, Ark.
 Hills Company, Geo. B., Jacksonville, Fla.
 Lockwood Greene Engrs., Inc., New York City.
 Spiker & Co., W. C., Atlanta, Ga.
 Turner, C. A. P., Minneapolis, Minn.
 Virginia Bridge & Iron Co., Roanoke, Va.
 (Textile Mills.)
 Lockwood Greene, Engrs., Inc., New York City.
 Main, Inc., Chas. T., Boston, Mass.
 Serrine & Co., J. E., Greenville, S. C.
 Hooser Engineering Co., Chicago, Ill.

(Ventilating and Heating.)

Biggs Eng. Co., W. E., Knoxville, Tenn.
 Wiley & Wilson, Lynchburg, Va.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.
 Pennington, J. B., Carson City, Nev.

ENGINES (Compressed Air.)

Dake Engine Co., Grand Haven, Mich.

(Diesel Type.)

Fairbanks, Morse & Co., Chicago, Ill.

(Gas and Gasoline.)

Light Mfg. & Fdry. Co., Pottstown, Pa.
 Novo Engine Co., Lansing, Mich.
 Sterling Engine Co., Buffalo, N. Y.
 Wisconsin Motors Co., Milwaukee, Wis.

(Gas and Oil.)

Chicago Pneumatic Tool Co., New York.

(Hoisting.)

Clyde Iron Works Sales Co., Duluth, Minn.

(Marine.)

Fairbanks, Morse & Co., Chicago, Ill.

(Oil.)

Ingersoll-Rand Co., New York, N. Y.
 Continental Gin Co., Birmingham, Ala.

(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Cole Mfg. Co., H. D., Newnan, Ga.
 Leffel & Co., The, James, Springfield, O.
 Lombard Iron Works & Supply Co., Augusta, Ga.
 Morris Machine Works, Baldwinville, N. Y.
 Schofield's Sons Co., J. S., Macon, Ga.

ENVELOPES.

Young & Seldon Co., Baltimore, Md.

EVAPORATORS.

Svenson Evaporator Co., Harvey, Ill.

EXCAVATING MACHINERY.

Bay City Shovels, Inc., Bay City, Mich.
 Buckeye Traction Ditcher Co., Findlay, O.
 Bucyrus-Erie Co., Erie, Penna.
 Clyde Iron Works Sales Co., Duluth, Minn.
 Harnischfeger Corp., Milwaukee, Wis.
 Hayward Co., The, New York, N. Y.
 Industrial Brownhoist Corp., Cleveland.
 Monaghan Mfg. Corp., Chicago, Ill.
 Northwest Engineering Co., Chicago, Ill.

Owen Bucket Co., The, Cleveland, Ohio.
 Parsons Co., The, Newton, Iowa.
 Thew Shovel Co., The, Lorain, Ohio.
 Universal Power Shovel Co., Milwaukee, Wis.

EXCAVATORS (Clamshell and Orange Peel.)

Northwest Engineering Co., Chicago, Ill.
 Ohio Power Shovel Co., Lima, Ohio.
 Thew Shovel Co., Lorain, Ohio.

(Dragline. See Dragline Excavators.)**(Trench.)**

Barber-Greene Co., Aurora, Ill.
 Bay City Shovels, Inc., Bay City, Mich.
 Buckeye Traction Ditcher Co., Findlay, O.
 Bucyrus-Erie Co., Erie, Penna.
 Harnischfeger Corp., Milwaukee, Wis.
 Hayward Co., The, New York, N. Y.
 Monaghan Mfg. Corp., Chicago, Ill.
 Ohio Power Shovel Co., Lima, Ohio.
 Parsons Co., The, Newton, Iowa.
 Universal Power Shovel Co., Milwaukee, Wis.

EXHAUST FANS (See Blowers and Exhaust Fans.)

—Systems (See Blowers and Exhaust Fans.)

EXPLOSIVES.

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
 Hercules Powder Co., Inc., Wilmington, Del.

FACTORY Management Systems.

Ernst & Ernst, New York, N. Y.

FANS, Exhaust (See Blowers and Exhaust Fans.)**FEED-WATER HEATERS and Purifiers.**

American Water Softener Co., Phila., Pa.

FELT (Building Sheathing.)

Barrett Co., The, New York, N. Y.

FENCING Entrance Gates (Iron, Steel and Wire.)

American Steel and Wire Co., Balto., Md.
 Anchor Post Fence Co., Baltimore, Md.
 Page Fence Association, Chicago, Ill.
 Stewart Iron Works Co., Cincinnati, O.
 —(Field and Industrial, Wire Woven.)
 American Steel and Wire Co., Balto., Md.
 Anchor Post Fence Co., Baltimore, Md.
 Gulf States Steel Co., Birmingham, Ala.
 Page Fence Association, Chicago, Ill.
 Stewart Iron Works Co., Cincinnati, O.

FERTILIZER MACHINERY.

Raymond Bros., Impact Pulv. Co., Chicago.

FILTER (For Domestic and Industrial Purposes.)

American Water Softener Co., Phila., Pa.
 International Filter Co., Chicago, Ill.
 Rees, S. P., Atlanta.
 Roberts Filter Mfg. Co., Darby (Phila.), Pa.
 Scaife & Sons Co., Wm. B., Oakmont, Pa.

FINANCING.

Akers, William, Atlanta, Ga.
 Canal Bank and Trust Co., New Orleans.
 Century Trust Co., Balto., Md.
 Electric Bond & Share Co., New York.
 Equitable Trust Co., New York City.
 Fisk & Sons, Harvey, New York, N. Y.
 Garraway & Co., S. G., Chicago.
 Gay & Co., W. O., New York, N. Y.
 Marx & Co., Birmingham, Ala.

FIRE CLAY.

Alabama Clay Products Co., Birmingham.
 Cambria Clay Products Co., Blackfork, O.

FIRE EXTINGUISHERS.

Myers & Bro. Co., The F. E., Ashland, O.

FIREPROOF Building Material.

Bannon Pipe Co., Louisville, Ky.
 Robertson Co., H. H., Pittsburgh.

—Doors and Shutters.

Kinnear Mfg. Co., The, Columbus, Ohio.
 Mahon Co., R. C., Detroit, Mich.
 Moeschl-Edwards Corr. Co., Cincinnati, O.
 Richards-Wilcox Mfg. Co., Aurora, Ill.

FIREPROOFING MATERIAL and Construction.

Peelle Co., The, Brooklyn, N. Y.

FITTINGS (Wire Rope.)

Leschen & Sons Rope Co., A., St. Louis.

FLANGES (Iron and Steel.)

Amer. Cast Iron Pipe Co., Birmingham.
 Dart Mfg. Co., E. M., Providence, R. I.

Taylor Forge & Pipe Wks., Chicago, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.
Vogt Mch. Co., Henry, Louisville, Ky.
—**and Flanged Fittings.**
Grinnell Co., Inc., Providence, R. I.

FLOOR (Asphalt Mastic.)
Barber Asphalt Co., Philadelphia, Pa.

—**(Composition.)**
Johns-Manville Corp., New York, N. Y.

—**(Cork Composition.)**
Congoleum-Nairn, Inc., Kearny, N. J.

—**(Hardwood, Maple, Oak.)**
Nashville Hardwood Flooring Co., Nashville, Tenn.

—**(Northern Hard Maple.)**
Holt Hardwood Co., Oconto, Wis.

—**(Open Steel.)**
Blaw-Knox Co., Pittsburgh, Pa.
Irving Iron Works Co., Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

—**(Rubber and Cork.)**
Congoleum-Nairn, Inc., Kearny, N. J.

—**(Anchors.)**
Bull Dog Floor Clip Co., Winterset, Iowa.

—**Covering.**
Congoleum-Nairn, Inc., Kearny, N. J.

—**Hardener (Concrete.)**
Sonneborn Sons, Inc., L. New York.

—**Plates and Stair Treads.**
American Pressed Steel Co., Phila., Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—**Steel (For Concrete Culverts, Roads, Streets.)**
Blaw-Knox Co., Pittsburgh, Pa.

—**Wax.**
Congoleum-Nairn, Inc., Kearny, N. J.

FLUSH-TANK SIPHONS.
Kaufstine Co., Inc., Perry, N. Y.
Pacific Flush-Tank Co., New York, N. Y.

FLYER PRESSERS.
Southern Spindle & Flyer Co., Charlotte, N. C.

FLYERS.
Southern Spindle & Flyer Co., Charlotte, N. C.

FORGINGS (Drop.)
Vogt Mch. Co., Henry, Louisville, Ky.

FORMS, Steel (For Concrete, Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)
Blaw-Knox Co., Pittsburgh, Pa.
Concrete Steel Co., New York, N. Y.

FOUNDATION MASONRY.
Calligan Co., A. H., Richmond, Va.

FOUNDRIES and Machine Shops.
Deemer Steel Casting Co., New Castle, Del.
General Machine Works, York, Pa.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
Goldens' Fdry. & Mch. Co., Columbus, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Moccasin Bushing Co., Chattanooga, Tenn.

FOUNDRY Equipment and Supplies.
Chain Belt Co., Milwaukee, Wis.
Hill & Griffith Co., The, Cincinnati, O.
—**Facings (Talc and Soapstone.)**
Hill & Griffith Co., The, Cincinnati, O.

FUMIGATORS (Fruit, Nuts, Nursery Stock, etc.)
Union Tank & Pipe Co., Los Angeles, Cal.

FURNACES (Industrial.)
Combustion Engr., Corp., New York City.
—**(Water-Cooled.)**
Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.

GALVANIZED Products.
Cattle & Bros., Jos. P., Philadelphia, Pa.
—**Steel and Iron.**
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Granite City Steel Co., Granite City, Ill.
Republic Iron & Steel Co., Youngstown, O.

GALVANIZING (Hot Dip.)
Bessemer Galvanizing Works, Birmingham.
Cattle & Bros., Jos. P., Philadelphia, Pa.
Muskogee Iron Works, Muskogee, Okla.
Newport News Shipbuilding & Drydock Co., Newport News, Va.

GARAGES (Metal.)
Maryland Metal Building Co., Balto., Md.

GARBAGE DISPOSAL SYSTEMS
Sealcell Corp., New York, N. Y.

GAS HOLDERS.
Chicago Bridge & Iron Works, Atlanta, Ga.

—**Producers.**
Wood & Co., R. D., Philadelphia, Pa.

GASOLINE and KEROSENE.
Gulf Refining Co., Pittsburgh, Pa.

GASOLINE SHOVELS (See Shovels.)

GATES (Automatic Drainage.)
Armed Culvert Mfrs. Assn., Middletown, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Dixie Culvert Mfg. Co., Little Rock, Ark.
Louisiana Corr. Culvert Co., Baton Rouge, La.
Tenn. Metal Culvert Co., Nashville, Tenn.
Western Metal Mfg. Co., Houston, Texas.

GAUGE GLASSES.
Jenkins Bros., New York, N. Y.

GEARS.
DeLaval Steam Turbine Co., Trenton, N. J.
Earle Gear & Machine Co., Phila., Pa.
Foote Bros. Gear & Mch. Co., Chicago.
General Electric Co., Schenectady, N. Y.

—**Cut.**
Ohio Gear Co., Cleveland, Ohio.

—**(Worm Reduction.)**
DeLaval Steam Turbine Co., Trenton, N. J.
Foote Bros. Gear and Mch. Co., Chicago.

GENERATORS, MOTORS (New.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—**(Used.)**
Belyet Co., Inc., New York City.
Electrical Equip. Co., Raleigh, N. C.
Gregory Electric Co., Chicago.
Nussbaum & Co., V. M., Ft. Wayne, Ind.
O'Brien Machinery Co., Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.
Stewart Elec. Co., John A., Cincinnati.

GEOLOGISTS. (See Engineers, Geological.)

GLASS (Art.)
Hinswanger & Co., Memphis, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.

—**(Plate.)**
Hinswanger & Co., Inc., Memphis, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.

—**(Window.)**
Hires Turner Glass Co., Philadelphia, Pa.

—**(Wire.)**
Hires Turner Glass Co., Phila., Pa.

GRADERS (Elevating.)
Adams Co., J. D., Indianapolis, Ind.
Caterpillar Tractor Co., San Leandro, Calif.

—**(Leaning Wheel Road.)**
Adams Co., J. D., Indianapolis, Ind.
Gallon Iron Works & Mfg. Co., Gallon, O.

—**(One Man Motor.)**
Adams Co., J. D., Indianapolis, Ind.
Gallon Iron Works & Mfg. Co., Gallon, O.
Riddell Co., W. A., Bucyrus, Ohio.

—**(Turbine.)**
Koehring Co., Milwaukee, Wis.

GRAPHITE.
Dixon Crucible Co., Jos., Jersey City, N. J.

GRATES and Grate Bars.
Schofield's Sons Co., J. S., Macon, Ga.
Vogt Machine Co., Henry, Louisville, Ky.

GRATING (Area, Flooring, Sidewalk.)
Blaw-Knox Co., Pittsburgh, Pa.
Hendrick Mfg. Co., Carbondale, Pa.
Irving Iron Works, Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

GRAVEL (Roofing and Road.)
American Limestone Co., Knoxville, Tenn.
Arundel Corp., The, Baltimore, Md.
Boxley & Co., W. W., Roanoke, Va.
Friend & Co., Inc., Petersburg, Va.

GREASE CUPS.
Lunkensheimer Co., The, Cincinnati, O.

GRILLES (Brass, Bronze, Steel, etc.)
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

GRINDERS (Cylinder.)
Hutto Engineering Co., Detroit, Mich.

—**(Electric.)**
Chicago Pneumatic Tool Co., New York.

—**(Gypsum, Limestone, etc.)**
Raymond Bros. Impact Pulv. Co., Chicago.

—**(Pneumatic.)**
Independent Pneumatic Tool Co., Chicago.

GRINDING MACHINERY (Flexible Saff.)
Hutto Engineering Co., Detroit, Mich.
Strand & Co., N. A., Chicago, Ill.

—**Wheels.**
Carborundum Co., Niagara Falls, N. Y.

GUARD RAIL (Road.)
National Traffic Guard Co., Atlanta.

GUNITE CONSTRUCTION.
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Gunite Conc. & Constr. Co., Kansas City.
Gunite Constr. Co., New York City.
Rust Engineering Co., Birmingham, Ala.

GUNPOWDER.
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

GUNS (Hydraulic.)
Georgia Iron Works, Augusta, Ga.

HANGARS (Airplane.)
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Maryland Metal Bldg. Co., Balto., Md.
Muskogee Iron Works, Muskogee, Okla.

HANGERS (Door, All Kinds.)
Richards-Wilcox Mfg. Co., Aurora, Ill.

—**(Line Shaft.)**
American Pulley Co., Philadelphia, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.

HARBOR IMPROVEMENTS.
Arundel Corp., Baltimore, Md.
Atlantic, Gulf & Pacific Co., New York.

HARDWARE (Door.)
Richards-Wilcox Mfg. Co., Aurora, Ill.

HEATING Apparatus (Engineers and Contractors.)
Grinnell Co., Inc., Providence, R. I.
Skinner Bros. Mfg. Co., St. Louis, Mo.

—**Systems.**
Clarage Fan Co., Kalamazoo, Mich.
Skinner Bros. Mfg. Co., St. Louis, Mo.

HOISTING MACHINERY.
Clyde Iron Works Sales Co., Duluth, Minn.

HOISTS (Air Portable.)
Independent Pneumatic Tool Co., Chicago.
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—**(Chain.)**
Harrington Co., The, Philadelphia, Pa.

—**(Electric.)**
Clyde Iron Works Sales Co., Duluth, Minn.
Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.

Mundy Hoisting Engine Co., J. S., Newark, N. J.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Machy. Co., Columbia, Pa.

Street Bros. Mch. Wks., Chattanooga, Tenn.

—**(Gasoline.)**
Clyde Iron Works Sales Co., Duluth, Minn.

Dake Engine Co., Grand Haven, Mich.
Mundy Hoisting Engine Co., J. S., Newark, N. J.

Novo Engine Co., Lansing, Mich.
O. K. Clutch & Machy. Co., Columbia, Pa.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—**(Hand Power.)**
O. K. Clutch & Machy. Co., Columbia, Pa.

—**(Steam.)**
Clyde Iron Works Sales Co., Duluth, Minn.
Dake Engine Co., Grand Haven, Mich.
Mundy Hoisting Engine Co., J. S., Newark, N. J.
Street Bros. Mch. Wks., Chattanooga, Tenn.

HOOPS, Bands, etc. (Galvanized.)
Connors Steel Co., Birmingham, Ala.

HOPPERS (Aggregate, Measuring and Weighing.)
Blaw-Knox Co., Pittsburgh, Pa.
Butler Bin Co., Waukesha, Wis.
Erie Steel Construction Co., Erie, Pa.

HOSE (Rubber.)
Republic Rubber Co., Youngstown, Ohio.

HOTELS.
Murphy's Hotel, Richmond, Va.
Rice Hotel, Houston, Texas.
Southern Hotel, The, Baltimore, Md.

HOUSE MOVING.
Eichleay, Jr. Co., John, Pittsburgh.

HULLS (Steel.)
American Steel Dredge Co., Fort Wayne, Ind.

HUMIDIFYING AND DRYING EQUIPMENT.
Grinnell Co., Inc., Providence, R. I.

HYDRANTS (Fire.)
Columbian Iron Works, Chattanooga, Tenn.
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Myers & Bro. Co., The, F. E., Ashland, O.
Vogt Brothers Mfg. Co., Louisville, Ky.
Waterous Co., St. Paul, Minn.
Wood & Co., R. D., Philadelphia, Pa.

HYDRO - ELECTRIC POWER COMPANIES (Offering Industrial and Commercial Opportunities.)

Alabama Power Co., Birmingham, Ala.
Central Power & Light Co., San Antonio.
Duke Power Co., Charlotte, N. C.
Georgia Power Co., Atlanta, Ga.
Kentucky Utilities Co., Louisville, Ky.
Tennessee Electric Power Co., Chattanooga, Tenn.
Texas Power & Light Co., Dallas, Texas.

ICE and Refrigerating Machinery and Supplies.
Ingersoll-Rand Co., New York, N. Y.
Vogt Mch. Co., Henry, Louisville, Ky.
York Ice Machinery Corp., York, Pa.

INCINERATORS.
Duplex Hanger Co., Cleveland, Ohio.
Swenson Evaporator Co., Harvey, Ill.

INCORPORATORS.
Corporation Service Co., Wilmington, Del.
Delaware Registration Trust Co., Wilmington, Del.

INDUSTRIAL DEVELOPMENT.
Pace Co., The, Chicago.

—**Surveys.**
Pace Co., The, Chicago.
Technical Service Co., New York, N. Y.

INJECTORS.
Jenkins Bros., New York, N. Y.
Randie Machinery Co., The, Cincinnati, O.

INSULATING MATERIALS.
General Electric Co., Schenectady, N. Y.
Johns-Manville Corp., New York, N. Y.
Okonite Co., New York, N. Y.

INVESTMENT SECURITIES.
Electric Bond & Share Co., New York.
Gay & Co., W. O., New York City.
Hanchett Bond Co., Inc., The, Chicago, Ill.
Marx & Co., Birmingham, Ala.
Mercantile Trust Co., Baltimore, Md.
Nuven & Co., John, Chicago.
Peabody & Co., Chicago.
Provident Savings Bank & Trust Co., Cincinnati, Ohio.

Robinson-Humphrey Co., Atlanta, Ga.
Seasongood & Mayer, Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, O.

IRON.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—**(Ingot, For Culverts, etc.)**
American Rolling Mill Co., Middletown, O.

JOINTS (Pipe.)
Leadite Co., The, Philadelphia, Pa.

JOIST HANGERS.
Duplex Hanger Co., Cleveland, Ohio.

LADDERS (Rolling.)

Myers & Bro. Co., The F. E. Ashland, O.

—(Wooden.)Dayton Safety Ladder Co., Cincinnati, O.
Patent Scaffolding Co., Chicago, Ill.**LAMPS (Incandescent.)**General Electric Vapor Lamp Co., Hoboken, N. J.
Western Electric Co., New York City.**LATH (Metal.)**Ingalls Iron Works Co., Birmingham, Ala.
Waterloo Constr. Co., Waterloo, Iowa.**LAWN FURNITURE (Wire.)**

Dufur, Baggett & Co., Baltimore, Md.

LIGHTS (Contractors.)

Milburn Co., The Alexander, Balto., Md.

LIGHTING (Factory and Mill.)

General Electric Vapor Lamp Co., Hoboken, N. J.

—Fixtures (Electric.)

Western Electric Co., New York City.

LIME RECOVERY SYSTEMS.

Swenson Evaporator Co., Harvey, Ill.

LININGS (Flue, Fire Clay.)Lee Clay Products Co., Clearfield, Ky.
Owensboro Sewer Pipe Co., Owensboro, Ky.**—(Tube Mill.)**

Fuller Lehigh Co., Fullerton, Pa.

LINOLEUM (Battleship, Jaspe.)

Congoleum-Nairn, Inc., Kearny, N. J.

LITHOGRAPHERS and ENGRAVERS.Smith & Son Co., Oscar T., Baltimore, Md.
Young & Seiden Co., Baltimore, Md.**LOADING and UNLOADING MACHINERY (Portable.)**Barber-Greene Co., Aurora, Ill.
Northwest Engineering Co., Chicago, Ill.**LOCOMOTIVES (Compressed Air.)**

Porter Co., H. K., Pittsburgh, Pa.

—(Electric.)

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

—(Fireless Stored Steam.)

Porter Co., H. K., Pittsburgh, Pa.

—(Gasoline.)

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

Porter Co., H. K., Pittsburgh, Pa.
Whitcomb Co., Geo. D., Rochelle, Ill.**—(Industrial.)**

Birmingham Rail & Locomotive Co., Birmingham, Ala.

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta.

Whitcomb Co., Geo. D., Rochelle, Ill.

—(Mining.)

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

Porter Co., H. K., Pittsburgh, Pa.
Whitcomb Co., Geo. D., Rochelle, Ill.**—(Railway.)**

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta.**LOGGING MACHINERY.**

Clyde Iron Works Sales Co., Duluth, Minn.

LUBRICANTS.Dixon Crucible Co., Jos., Jersey City, N. J.
Gulf Refining Co., Pittsburgh, Pa.**LUBRICATORS (Force Feed.)**

Lunkenhelmer Co., The, Cincinnati, O.

LUBRICATION SYSTEMS.

Alemite Corp., Chicago, Ill.

LUMBER (Ceiling, Flooring, Siding.)Central Coal & Coke Co., Kansas City, Mo.
Industrial Lumber Co., Elizabeth, La.**—(Creosoted.)**

Amer. Creosote Wks., Inc., New Orleans, La.

Amer. Creosoting Co., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Eppinger & Russell Co., New York, N. Y.

Gulf States Creos. Co., Hattiesburg, Miss.

Pretzman & Sons, J. F., Charleston, S. C.

Savannah Creos. Co., Savannah, Ga.

—(Heavy Construction, Pitch, Pine, etc.)

Central Coal & Coke Co., Kansas City, Mo.

Industrial Lumber Co., Elizabeth, La.

—(Salt Treated.)

Meredith Co., William C., Atlanta.

—(Yellow Pine.)

Central Coal & Coke Co., Kansas City, Mo.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York City.

MACHINERY (Special.)

Bliss Co., E. W., Brooklyn, N. Y.

Earle Gear & Machine Co., Phila., Pa.

General Machine Works, York, Pa.

—and Supplies (New and Used.)

Beatty Machine & Mfg. Co., Hammond, Ind.

Belyea Co., Inc., New York City.

Electric Service Co., Cincinnati, Ohio.

Equip. Sales & Rentals Co., Pittsburgh.

Heitken Engineering Corp., New York.

Marine Metal & Supply Co., New York.

Nashville Ind. Corp., Old Hickory, Tenn.

O'Brien Machinery Co., The, Phila., Pa.

Randle Machinery Co., The, Cincinnati, O.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

Seyfert's Sons, Inc., L. F., Phila., Pa.

Zelnicker Supply Co., W. A., St. Louis.

MACHINE TENDERS (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

—(Tools.)

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.

O'Brien Machinery Co., Phila., Pa.

MAIL CHUTES.

Cutler Mail Chute Co., Rochester, N. Y.

MARBLE (Producers and Manufacturers.)

Georgia Marble Co., Tate, Ga.

METAL-Cutting Machinery.

Atkins & Co., E. C., Indianapolis, Ind.

Earle Gear & Machine Co., Phila., Pa.

—Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

METERS (Venturi and Pilot Tube Types.)

Simplex Valve & Meter Co., Phila., Pa.

METHANOL (Synthetic Methyl Alcohol.)

Du Pont Ammonia Corp., Wilmington, Del.

MILL MACHINERY and SUPPLIES.

Lombard Iron Works & Supply Co., Augusta, Ga.

MINING MACHINERY.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

MIXERS (Asphalt.)

Erie Machine Shops, Erie, Pa.

—(Hot.)

Koehring Co., Milwaukee, Wis.

—(Plaster.)

Blystone Mfg. Co., Cambridge Springs, Pa.

Chain Belt Co., Milwaukee, Wis.

Dunning & Boschert Press Co., Syracuse, N. Y.

Jaeger Machine Co., Columbus, Ohio.

MORTAR MIXERS.

Chain Belt Co., Milwaukee, Wis.

Jaeger Machine Co., Columbus, Ohio.

—Ingredient.

Louisville Cement Co., Louisville, Ky.

MOTORS (Electric.)

Fairbanks, Morse & Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Western Electric Co., New York City.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Gasoline.)

Wisconsin Motor Co., Milwaukee, Wis.

MOTOR TRUCKS.

International Harvester Co. of America, Inc., Chicago, Ill.

NAILS (Cut.)

Reading Iron Co., Reading, Pa.

—and Spikes.

American Steel & Wire Co., Balto., Md.

Gulf States Steel Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

NATURAL GAS COMPANIES.

(Offering Industrial and Commercial Opportunities.)

Arkansas Natural Gas Corp., Shreveport, La.

OIL (Fuel and Gas.)

Gulf Refining Co., Pittsburgh, Pa.

—Cups.

Lunkenhelmer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY.

Georgia Iron Works, Augusta, Ga.

McLanahan Stone Machine Co., Hollidaysburg, Pa.

ORNAMENTAL BRONZE WORK.

Heath Co., J. S., Waukegan, Ill.

—Iron Work.

Roanoke Iron & Bridge Wks., Roanoke, Va.

Sneed Architectural Iron Works, Louisville, Ky.

Southern Engineering Co., Charlotte, N. C.

Stewart Iron Works Co., Cincinnati, O.

PACKING (Asbestos, Metallic, Rubber, Leather, etc.)

Jenkins Bros., New York, N. Y.

Johns-Manville Corp., New York, N. Y.

Republic Rubber Co., Youngstown, Ohio.

PAINT (Aluminum.)

Aluminum Co. of America, Pittsburgh, Pa.

—(Metal Surfaces.)

Aluminum Co. of America, Pittsburgh, Pa.

Dixon Crucible Co., Jos., Jersey City, N. J.

Pittsburgh Plate Glass Co., Pittsburgh, Pa.

—(Mill White, For Interior.)

Aluminum Co. of America, Pittsburgh, Pa.

Pittsburgh Plate Glass Co., Pittsburgh, Pa.

Sonneborn Sons, Inc., L., New York.

—(Preservative.)

Cabot, Inc., Samuel, Boston, Mass.

Foster Co., Benjamin, Philadelphia, Pa.

PANELBOARDS.

Adam Elec. Co., Frank, St. Louis.

PARTITIONS (Metal, Folding, Rolling.)

Kinnear Mfg. Co., The, Columbus, Ohio.

Lupton's Sons Co., David, Phila., Pa.

—(Sectionfold, Rolling, Wood.)

Wilson Corp., The, J. G. New York.

PATENT ATTORNEYS.

Buck, Sterling P., Washington, D. C.

Coleman, Watson E., Washington, D. C.

Easton, Paul B., Charlotte, N. C.

Sannett, Edward C., Washington, D. C.

Seymour & Bright, Washington, D. C.

PATTERNS (Drawing, etc.)

Haas Pattern Co., A. W., Atlanta, Ga.

PAVING BLOCKS (Creosoted Wood.)

American Creosote Works, New Orleans.

—Mixers (Concrete.)

Koehring Co., Milwaukee, Wis.

—Plant (Asphalt.)

Simplicity System Co., Chattanooga, Tenn.

PENSTOCKS.

Chicago Bridge & Iron Works, Atlanta.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Smith Co., S. Morgan, York, Pa.

Taylor Forge & Pipe Wks., Chicago, Ill.

PERFORATED METAL.

Chicago Perforating Co., Chicago, Ill.

Erie Perforating Co., Rochester, N. Y.

Harrington & King Perf. Co., Chicago.

Hendrick Mfg. Co., Carbondale, Pa.

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

Mundt & Sons, Charles, Jersey City, N. J.

Northmann-Duffke Co., Milwaukee, Wis.

PETROLEUM REFINERS.

Gulf Refining Co., Pittsburgh, Pa.

PHOSPHATE ACID

Davison Chemical Co., Baltimore, Md.

—(Machinery.)

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

PIG-IRON.

Hammond Iron Co., Birmingham, Ala.

Republic Iron & Steel Co., Youngstown, Ohio.

Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

PILE SHOES.

Janney, Jr., Jos. A., Phila., Pa.

PILING (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville.

Ayer & Lord Tie Co., Inc., Chicago.

Pretzman & Sons, J. F., Charleston, S. C.

Savannah Creosoting Co., Inc., Savannah.

Wales Wood-Preserving Co., Norfolk, Va.

—(Steel Sheet.)

Carnegie Steel Co., Pittsburgh, Pa.

Wemlinger, Inc., New York, N. Y.

Zelnicker Supply Co., W. A., St. Louis.

PILLOW BLOCKS.

Goldens' Fdry. & Mch. Co., Columbus, Ga.

PIPE.

Albert & Davidson Pipe Corp., Brooklyn, N. Y.

Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.

Birmingham Boiler & Engr. Co., Birmingham, Ala.

Central Pipe & Sup. Co., Charleston, W. Va.

Clay Products Assn., Chicago, Ill.

Eastern Clay Prod. Assn., Philadelphia.

Greenpoint Iron & Pipe Co., Inc., Brooklyn, N. Y.

Hammond Iron Co., Birmingham, Ala.

Harrisburg Pipe and Pipe Bending Co., Harrisburg, Pa.

Hudson Pipe & Sup. Co., Bayonne, N. J.

National Tube Co., Pittsburgh, Pa.

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Power Piping Co., Pittsburgh, Pa.

Smith Corp., A. O., Milwaukee, Wis.

—(Cast Iron.)

Amer. Cast Iron Pipe Co., Birmingham.

Cast Iron Pipe Research Assn., Chicago.

Central Foundry Co., The, New York, N. Y.

Giamorgan Pipe & Fdry. Co., Lynchburg, Va.

U. S. Pipe & Foundry Co., Burlington, N. J.

—(Coil.)

Harrisburg Pipe and Pipe Bending Co., Harrisburg, Pa.

—(Dredge.)

Abendroth & Root Mfg. Co., New York.

Taylor Forge & Pipe Wks., Chicago, Ill.

—(Hammer-Welded.)

National Tube Co., Pittsburgh, Pa.

—(Iron and Steel.)

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—(Riveted.)

Abendroth & Root Mfg. Co., New York.

—(Second-Hand.)

Albert & Davidson Pipe Corp., Brooklyn, N. Y.

Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.

Central Pipe & Sup. Co., Charleston, W. Va.

Greenpoint Iron & Pipe Co., Inc., Brooklyn, N. Y.

Hudson Pipe & Supply Co., Bayonne, N. J.

Marine Metal & Supply Co., New York.

—(Spiral Riveted.)

Abendroth & Root Mfg. Co., New York.

Taylor Forge & Pipe Wks., Chicago, Ill.

—(Steel.)

Bethlehem Steel Co., Bethlehem, Pa.

National Tube Co., Pittsburgh, Pa.

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Power Piping Co., Pittsburgh, Pa.

Republic Iron & Steel Co., Youngstown, Ohio.

Smith Corp., A. O., Milwaukee, Wis.

Taylor Forge & Pipe Wks., Chicago, Ill.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

PLATES (Steel.)

Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Granite City Steel Co., Granite City, Ill.
Ryerson & Son, Inc., Jos. T., St. Louis and New York
Tennessee Coal, Iron & Railroad Co., Birmingham.

PNEUMATIC TOOLS.

Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.

POLES (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Pretzman & Sons, J. F., Charleston, S. C.
Savannah Creosoting Co., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.

(Tubular, Steel.)

National Tube Co., Pittsburgh, Pa.
—(Zinc Meta Arsenite Treated.)
Curtin-Howe Corp., New York City.

POLISHING MACHINERY.

(Wheels, Blocks.)
Carborundum Co., Niagara Falls, N. Y.

PORTABLE HOUSES (Metal.)

Braden Steel Corp., Tulsa, Okla.
Maryland Metal Building Co., Balto., Md.

POST CAPS.

Duplex Hanger Co., Cleveland, Ohio.

POSTS (Cast Iron, Railway and Highway.)

U. S. Pipe & Foundry Co., Burlington, N. J.

POWER TRANSMISSION MACHINERY.

American Pulley Co., Philadelphia, Pa.
Diamond Chain & Mfg. Co., Indianapolis.
Foote Bros. Gear & Machine Co., Chicago.
Golden's Fdry. & Mch. Co., Columbus, Ga.
Morse Chain Co., Ithaca, N. Y.
O'Brien Machinery Co., Phila., Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

PREHEATERS (Air.)

Combustion Engr. Corp., New York City.

PRESSES (Baling, Cottonseed Oil, Hydraulic and Power.)

Dunning & Roschert Press Co., Inc., Syracuse, N. Y.
Ripley Foundry & Machine Co., Ripley, O.
—(Hydraulic Wheel.)
Inter-State Fdry. & Mch. Wks., Johnson City, Tenn.

(Metal Stamping.)

Bliss Co., E. W., Brooklyn, N. Y.

PRINTERS (Book, Catalog, Job.)

Smith & Son Co., Oscar T., Baltimore Md.
Young & Selden Co., Baltimore, Md.

PRODUCER (Gas Machines.)

Morgan Constr. Co., Worcester, Mass.

PULLER-JACKS.

Edelblute Co., T. H., Pittsburgh, Pa.

PULLEYS (Friction Clutch.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Wood's Sons Co., T. B., Chambersburg, Pa.

(Motor and Machine.)

American Pulley Co., Philadelphia, Pa.

(Steel Split.)

American Pulley Co., Phila., Pa.

—Shafting and Hangers.

American Pulley Co., Phila., Pa.
Foote Bros. Gear & Mch. Co., Chicago.
Golden's Fdry. & Mch. Co., Columbus, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

PULVERIZED FUEL EQUIPMENT.

Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.

PULVERIZERS (See Crushing and Pulverizing Machinery.)**PUMPING MACHINERY.**

American Well Works, Aurora, Ill.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Chain Belt Co., Milwaukee, Wis.
Cook, Inc., A. D., Lawrenceburg, Ind.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Keystone Pump & Drill Co., Beaver Falls, Pa.
Moffatt Mehry. Mfg. Co., Charlotte, N. C.
Myers & Bro. Co., The F. E., Ashland, Ohio.

Platt Iron Works, Dayton, Ohio.
Viking Pump Co., Cedar Falls, Iowa.
Virginia Mehry. & Well Co., Richmond, Va.
Wood & Co., R. D., Philadelphia, Pa.

PUMPS (Air.)

Manistee Iron Works Co., Manistee, Mich.

—(Air Lift.)

Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Boiler Feed.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Wks., Medina, N. Y.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Manistee Iron Works Co., Manistee, Mich.
Moffatt Mehry. Mfg. Co., Charlotte, N. C.
Myers & Bro. Co., The F. E., Ashland, O.

—(Centrifugal.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
American Well Works, Aurora, Ill.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Dean Bros. Co., Indianapolis, Ind.
DeLaval Steam Turbine Co., Trenton, N. J.
Emerson Pump & Valve Co., Alexandria, Va.

Erie Pump & Engine Wks., Medina, N. Y.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Jaeger Machine Co., Columbus, Ohio.
Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.
Morris Machine Wks., Baldwinville, N. Y.
Novo Engine Co., Lansing, Mich.
Wood & Co., R. D., Philadelphia, Pa.

—(Contractors.)

Emerson Pump & Valve Co., Alexandria, Va.
Erie Pump & Engine Wks., Medina, N. Y.
Novo Engine Co., Lansing, Mich.

—(Deep Well.)

American Well Works, Aurora, Ill.
Cook, Inc., A. D., Lawrenceburg, Ind.
Keystone Pump & Drill Co., Beaver Falls, Pa.
Layne & Bowler, Inc., Memphis, Tenn.
Novo Engine Co., Lansing, Mich.

—(Diaphragm.)

Novo Engine Co., Lansing, Mich.

—(Hydraulic.)

Dunning & Roschert Press Co., Inc., Syracuse, N. Y.

—(Power.)

American Well Works, Aurora, Ill.
Platt Iron Works, Dayton, Ohio.
Sterling Engine Co., Buffalo, N. Y.

—(Pulverized Coal.)

Fuller Lehigh Co., Fullerton, Pa.

—(Rotary.)

Viking Pump Co., Cedar Falls, Iowa.

—(Sand and Dredging.)

Ellis Machine Corp., Baltimore, Md.
Erie Pump & Engine Wks., Medina, N. Y.
Georgia Iron Works, Augusta, Ga.

—(Steam.)

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Dean Bros. Co., Indianapolis, Ind.
Emerson Pump & Valve Co., Alexandria, Va.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Works), New York, N. Y.
Platt Iron Works, Dayton, Ohio.

—(Vacuum.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Water Works.)

American Well Works, Aurora, Ill.
Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.

PUNCHING AND SHEARING MACHINERY.

Beatty Machine & Mfg. Co., Hammond, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.

RACK RAKES.

Newport News Shipbuilding & Drydock Co., Newport News, Va.

RADIATOR ENCLOSURES.

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

RAILINGS (Iron Pipe.)

Pipe Railing Constr. Co., Long Island City, N. Y.

—(and Grilles, Iron and Brass, (Banks and Offices.)
Dufur, Baggott & Co., Baltimore, Md.

RAILROAD Equipment and Supplies (New.)

Robinson & Orr, Pittsburgh, Pa.
—(Equipment and Supplies (Used.)
Birmingham Rail & Loco. Co., Birmingham.

Equip. Sales & Rentals Co., Pittsburgh.
Levis & Co., Henry, Philadelphia, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron and Equip. Co., Atlanta.
Zelnicke Supply Co., W. A., St. Louis.

—(Frogs and Switches.)

Bethlehem Steel Co., Bethlehem, Pa.
Frank, M. K., Pittsburgh, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.
Robinson & Orr, Pittsburgh, Pa.

RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)

Atlanta and West Point R. R., Atlanta.
Atlantic Coast Line, R. R., Wilmington, N. C.
Central of Georgia Rwy., Savannah, Ga.
Missouri - Kansas - Texas Lines, Dallas, Texas.
Missouri-Pacific Lines, St. Louis, Mo.
Model Land Company, Flagler System, St. Augustine, Fla.
Norfolk & Western Railway, Roanoke, Va.
Southern Railway System, Washington, D. C.
Tennessee Central Railway, Nashville, Tenn.

RAILS (New and Used.)

Birmingham Rail & Locomotive Co., Birmingham, Ala.
Carnegie Steel Co., Pittsburgh, Pa.
Frank, M. K., Pittsburgh, Pa.
Levis & Co., Henry, Philadelphia, Pa.
Perry, Buxton, Doane Co., Philadelphia.
Robinson & Orr, Pittsburgh, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron & Equip. Co., Atlanta, Ga.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Weller & Co., Birmingham, Ala.
Zelnicke Supply Co., W. A., St. Louis.

RAILWAYS (Industrial.)

Easton Car & Construction Co., Easton, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.

—(Marine.)

Charleston Dry Dock and Machine Co., Charleston, S. C.

RECEPTACLES (Self-Closing, Waste Paper.)

Whittaker Paper Co., Baltimore, Md.

REELS and SPOOLS. (Pressed Metal.)

American Pulley Co., Philadelphia, Pa.

REFRACTORIES.

Harbison-Walker Refractories Co., Pittsburgh.
Taylor Sons Co., Charles, Cincinnati.

REFRIGERATING Machinery (See Ice and Refrigerating Machinery and Supplies.)**REINFORCING for Concrete.**

American Steel and Wire Co., Balto., Md.
Carnegie Steel Co., Pittsburgh, Pa.
Concrete Steel Co., New York, N. Y.
Connors Steel Co., Birmingham, Ala.
Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville, Tenn.
National Steel Fabric Co., Pittsburgh, Pa.
Pidgeon-Thomas Iron Co., Memphis, Tenn.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Southern Engineering Co., Charlotte, N. C.
Truscon Steel Co., Youngstown, O.

RIVER & HARBOR IMPROVEMENTS, (Dredging, Docks, Wharves, etc.)

Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.
Kansas City Bridge Co., Kansas City.

RIVETS.

Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

ROAD and Street Machinery.

Acme Road Mehry. Co., Frankfort, N. Y.
Adams Co., J. D., Indianapolis, Ind.
Blaw-Knox Co., Pittsburgh, Pa.
Buffalo-Springfield Roller Co., Springfield, O.
Caterpillar Tractor Co., San Leandro, Cal.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., The, Marion, Ohio.
Universal Crane Co., Lorain, Ohio.

—(and Street Material.)

Bituminous Earth Road Corp., Raleigh, N. C.
Boxley & Co., W. W., Roanoke, Va.
Interstate Asphalt Co., Wilmington, Del.
Kentucky Rock Asphalt Co., Louisville, Ky.
Shell Petroleum Corp., New Orleans.
Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.
Truscon Steel Co., Youngstown, O.
Woodstock Slag Corp., Birmingham, Ala.

—(Graders and Scrapers.
Acme Road Mehry. Co., Frankfort, N. Y.
Adams Co., J. D., Indianapolis, Ind.
Caterpillar Tractor Co., San Leandro, Cal.

—Oils and Preservatives.

Gulf Refining Co., Pittsburgh, Pa.
Shell Petroleum Corp., New Orleans.

—Reinforcement (Welded Fabric.)

American Steel & Wire Co., Balto., Md.
Concrete Steel Co., New York, N. Y.
National Steel Fabric Co., Pittsburgh, Pa.

—Rollers (Steam and Gasoline.)

Acme Road Mehry. Co., Frankfort, N. Y.
Buffalo-Springfield Roller Co., Springfield, O.

Erie Machine Shops, Erie, Pa.
Gallion Iron Works & Mfg. Co., Gallion, O.
Huber Mfg. Co., The, Marion, Ohio.

—Rollers (For Concrete Work.)

Macon Concrete Roller Co., Macon, Ga.

—Scarifiers.

Buffalo-Springfield Roller Co., Springfield, O.

ROOFING (Asphalt, Built-up.)

Barber Asphalt Co., Philadelphia, Pa.

—(Ready Prepared, Felt, Tar, Asbestos, Asphalt.)

Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Barrett Co., The, New York, N. Y.
Eternit, Inc., St. Louis, Mo.
Johns-Manville Corp., New York, N. Y.

—(and Siding (Composition.)

Eternit, Inc., St. Louis, Mo.
Johns-Manville Corp., New York, N. Y.

—(and Siding (Metal.)

American Rolling Mill Co., Middletown, O.
American Sheet and Tin Plate Co., Pittsburgh, Pa.
Moesch-Edwards Corr. Co., Cincinnati, O.
Pidgeon-Thomas Iron Co., Memphis, Tenn.
Republic Iron & Steel Co., Youngstown, O.
Robertson Co., H. H., Pittsburgh.
Ryerson & Son, Jos. T., St. Louis and New York.
Truscon Steel Co., Youngstown, O.
Youngstown Sheet and Tube Co., Youngstown, O.

—Tile, Cement (Interlocking Flat, Channel Glass.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—Tiles.

Amer. Cement Tile Mfg. Co., Pittsburgh.

ROPE (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis.

—Drives.

Wood's Sons Co., T. B., Chambersburg, Pa.

RULES (Steel.)

Lufkin Rule Co., Saginaw, Mich.

SAND.

Arundel Corp., Baltimore, Md.
Friend & Co., Inc., Petersburg, Va.

SANITARY Drinking Fountains.

Rundie-Spence Mfg. Co., Milwaukee, Wis.

SASH (Industrial.)

Detroit Steel Products Co., Detroit, Mich.
Truscon Steel Co., Youngstown, O.

—(Operating Devices.)

Detroit Steel Products Co., Detroit, Mich.

—(Steel.)

Detroit Steel Products Co., Detroit, Mich.

—(Steel, Basement, Ventilating.)

Detroit Steel Products Co., Detroit, Mich.

SAWMILL Machinery.

Schofield's Sons Co., J. S., Macon, Ga.

SAWS.

Atkins & Co., Inc., E. C., Indianapolis.

—(Cold Metal.)

Earle Gear and Machine Co., Phila., Pa.

—(Hack.)

Atkins & Co., Inc., E. C., Indianapolis.

—(Portable, Electric, Hand.)

Wappat, Incorporated, Pittsburgh, Pa.

SCAFFOLDING (Wooden.)

Patent Scaffolding Co., Chicago, Ill.

SCALES (Industrial, Platform.)

American Kron Scale Co., New York City.

—(Textile.)

American Kron Scale Co., New York City.

SCOOPS (Hand.)

American Mfg. Co., Chattanooga, Tenn.

—Wheeled.

Riddell Co., W. A., Bucyrus, Ohio.

SCHAPERS (Drag and Wheel.)

Adams Co., J. D., Indianapolis, Ind.
Gallion Iron Works & Mfg. Co., Gallion, O.
Sauerman Bros., Chicago, Ill.

SCRAP IRON AND STEEL.

Hunts Sons, M. J., Philadelphia, Pa.
Perry, Buxton, Doane Co., Philadelphia.
Smith & Co., W. M., Birmingham, Ala.

SCREENING (For Concrete and Road Construction.)

American Limestone Co., Knoxville, Tenn.

SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)

Chicago Perforating Co., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
Northmann-Duffke Co., Milwaukee, Wis.
Stephens-Adams Mfg. Co., Birmingham, Ala.
Sturtevant Mill Co., Boston, Mass.
Universal Crusher Co., Cedar Rapids, Iowa.

SCREW-Machine Products.

Progressive Mfg. Co., Torrington, Conn.

SCREWS (Machine.)

Progressive Mfg. Co., Torrington, Conn.

SEATING (Churches, Schools, Halls, etc.)

Brunswick Seating Works, Lawrenceville, Va.

SEAWALLS.

Shore-Line Builders, Inc., Jacksonville, Fla.

SEPARATORS (Air.)

Sturtevant Mill Co., Boston, Mass.

—(Dust.)

Raymond Bros., Impact Pulv. Co., Chicago.

SEPTIC TANKS.

Kaustine Co., Inc., Perry, N. Y.

SEWAGE Disposal Apparatus.

Kaustine Co., Inc., Perry, N. Y.
Pacific Flush-Tank Co., New York, N. Y.

SEWER Joint Compounds.

Pacific Flush-Tank Co., New York, N. Y.

—Pipe (Vitrified.)

Bannon Pipe Co., Louisville, Ky.
Cambria Clay Products Co., Blackfork, O.
Clay Products Association, Chicago, Ill.
Dee Co., Wm. E., Oak Hill, Ohio.
Eastern Clay Prod. Assn., Philadelphia.
Lee Clay Products Co., Clearfield, Ky.
Owensboro Sewer Pipe Co., Owensboro, Ky.

SHAFTING.

Foot Bros., Gear & Mach. Co., Chicago.
Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

—(Cold Rolled.)

Bliss & Laughlin, Inc., Harvey, Ill.

—(Flexible.)

Strand & Co., N. A., Chicago, Ill.

—Material (Tubular.)

National Tube Co., Pittsburgh, Pa.

—(Splined.)

Ohio Gear Co., Cleveland, Ohio.

SHARPENING Stones.

Carborundum Co., Niagara Falls, N. Y.

SHEET Metal Work.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

—Metal Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.
Yoder Co., The, Cleveland, Ohio.

—Steel and Iron.

American Rolling Mill Co., Middletown, O.
American Sheet and Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.
Republic Iron & Steel Co., Youngstown, O.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.

SHEETS (Asbestos.)

Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Eternit, Inc., St. Louis, Mo.

SHELVING (Unit.)

Lupton's Sons Co., David, Phila., Pa.

SHINGLES (Asbestos.)

Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Eternit, Inc., St. Louis, Mo.

—(Stain.)

Cabot, Inc., Samuel, Boston, Mass.

SHORES (Self-Locking, Adjustable.)

Roos, Co., H. W., Cincinnati, Ohio.

SHOVELS (Hand.)

American Mfg. Co., Chattanooga, Tenn.

—(Steam, Gas and Electric Power.)

Bucyrus-Erie Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.

SHUTTERS (Steel.)

Merchant & Evans Co., Philadelphia, Pa.

Pelle Co., The, Brooklyn, N. Y.

—(Steel and Wood Bifolding.)

Kinnear Mfg. Co., The, Columbus, Ohio.

SILICATE OF SODA.

Crassell Chemical Co., Inc., Birmingham, Ala.

SITES (Manufacturing.)

Alabama Power Co., Birmingham, Ala.
Arkansas Natural Gas Corp., Shreveport, La.
Atlanta and West Point R. R., Atlanta, Ga.
Atlanta, Ga., Industrial Bureau C. of C. Brown & Co., Chattanooga, Tenn.
Central of Georgia Rwy., Savannah, Ga.
Daytona Beach Chamber of Commerce, Daytona Beach, Fla.
Central Power & Light Co., San Antonio, Orlean, La.
Duke Power Co., Charlotte, N. C.
Galveston City of, Galveston, Texas.
Georgia Power Co., Atlanta, Ga.
Industrial Dallas, Inc., Dallas, Texas.
Kentucky Utilities Co., Louisville, Ky.
Missouri-Kansas-Texas Lines, Dallas, Texas.
Missouri-Pacific Lines, St. Louis, Mo.
Model Land Company, (Flagler System), St. Augustine, Fla.
New Orleans Assn. of Commerce, New Orleans, La.
Norfolk & Western Railway, Roanoke, Va.
Oklahoma City Chamber of Commerce, Oklahoma City, Okla.
Southern Railway System, Washington, D. C.
State Commission on Conservation & Development, Richmond, Va.
Tennessee Central Railway, Nashville, Tenn.
Tennessee Electric Power Co., Chattanooga, Tenn.
Texas Power & Light Co., Dallas, Texas.

SKYLIGHTS.

Robertson Co., H. H., Pittsburgh, Pa.

SLABS (Concrete Floor.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Concrete Roof.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

SLAG, For Concrete.

Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.

Woodstock Slag Corp., Birmingham, Ala.

—(Furnace.)

Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.

Woodstock Slag Corp., Birmingham, Ala.

SLINGS (Chain.)

Woodhouse Chain Works, Trenton, N. J.

—(Wire Rope.)

Roebling's Sons Co., John A., Trenton, N. J.

SLUICE GATES AND APPLIANCES.

Smith Co., S. Morgan, York, Pa.

Yoder Co., The, Cleveland, Ohio.

SMELTERS.

Swenson Evaporator Co., Harvey, Ill.

SNATCH BLOCKS (For Wire and Manila Rope.)

Patterson Co., W. W., Pittsburgh.

SPADES.

American Mfg. Co., Chattanooga, Tenn.

SPEED REDUCERS.

Earle Gear & Mach. Co., Phila., Pa.

Foot Bros. Gear & Mch. Co., Chicago.

Morse Chain Co., Ithaca, N. Y.

SPIKES (Railroad, Ship.)

Bethlehem Steel Co., Bethlehem, Pa.

Republic Iron & Steel Co., Youngstown, O.

Sweet's Steel Co., Williamsport, Pa.

SPRINGS (Machinery, Railway, Spiral Steel.)

American Steel & Wire Co., Balto., Md.

Raymond Mfg. Co., Corry, Pa.

—(Wire—All Kinds.)

American Steel & Wire Co., Balto., Md.

SPRINKLERS (Automatic Fire.)

Grinnell Co., Inc., Providence, R. I.

SPROCKETS.

Diamond Chain & Mfg. Co., Indianapolis.

Foot Bros. Gear & Mch. Co., Chicago.

Morse Chain Co., Ithaca, N. Y.

STACKS (Iron and Steel.)

Biggs Boiler Works Co., Akron, Ohio.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge and Iron Works, Atlanta.

Downingtown Iron Wks., Downingtown, Pa.

Hammond Iron Works, Warren, Pa.

Ingalls Iron Works Co., Birmingham, Ala.

Lancaster Iron Works, Lancaster, Pa.

Lombard Iron Works & Supply Co., Augusta, Ga.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.

U. S. Pipe & Foundry Co., Burlington, N. J.

Virginia Bridge & Iron Co., Roanoke, Va.

STAINS (Shingle, Woodwork.)

Cabot, Inc., Samuel, Boston, Mass.

STAIR Steps (Safety.)

Irving Iron Works Co., Long Is. City, N.Y.

—Treads.

Central Iron & Steel Co., Harrisburg, Pa.

—Treads (Non-slipping.)

Concrete Steel Co., New York, N. Y.

STAMPING (Sheet Metal.)

American Pulley Co., Philadelphia, Pa.

—Steel (All Kinds.)

Commercial Shearing & Stamping Co., Youngstown, Ohio.

STANDPIPES.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.

Hammond Iron Works, Warren, Pa.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

STATIONERS (Envelopes, Letter and Billheads, etc.)

Smith & Son Co., Oscar T., Baltimore, Md.

Young & Selden Co., Baltimore, Md.

STEAM SHOVELS.

Bucyrus-Erie Co., Erie, Pa.

Thew Shovel Co., The, Lorain, Ohio.

—Specialties.

Jenkins Bros., New York, N. Y.

Lunkenheimer Co., The, Cincinnati, O.

Mueller Co., Decatur, Ill.

—Traps.

Jenkins Bros., New York, N. Y.

STEEL.

Bethlehem Steel Co., Bethlehem, Pa.

Central Iron & Steel Co., Harrisburg, Pa.

Crucible Steel Co., of Amer., New York City.

Dietrich Brothers, Baltimore, Md.

Gulf States Steel Co., Birmingham, Ala.

Republic Iron & Steel Co., Youngstown, O.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Alloy.)

Crucible Steel Co. of Amer., New York City.

Harrisburg Pipe and Pipe Bending Co., Harrisburg, Pa.

Timken Roller Bearing Co., Canton, Ohio.

—(Cold Drawn.)

Bliss & Laughlin, Inc., Harvey, Ill.

—(Cold Rolled.)

American Steel & Wire Co., Balto., Md.

Bliss & Laughlin, Inc., Harvey, Ill.

—(Information Only.)

American Institute of Steel Construction, Inc., New York City.

—(Liners for Sewers, Tunnels and Caissons.)

Commercial Shearing & Stamping Co., Youngstown, O.

—(Special Analysis.)

Timken Roller Bearing Co., Canton, Ohio.

—(Tool, High Speed.)

Bethlehem Steel Co., Bethlehem, Pa.

Crucible Steel Co. of Amer., New York City.

—Buildings (Designers and Builders.)

American Bridge Co., New York, N. Y.

Belmont Iron Works, Philadelphia, Pa.

Braden Steel Corp., Tulsa, Okla.

Butler Mfg. Co., Kansas City, Mo.

Carolina Steel & Iron Co., Greensboro, N. C.

Champion Bridge Co., Wilmington, O.

Eichleay, Jr. Co., John, Pittsburgh.

Ingalls Iron Works Co., Birmingham, Ala.

McClintic-Marshall Co., Pittsburgh, Pa.

Muskogee Iron Works, Muskogee, Okla.

Phoenix Iron Co., The, Phila., Pa.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Richmond Struc. Steel Co., Richmond, Va.

Virginia Bridge & Iron Co., Roanoke, Va.

—Forms (Curb, Gutter, Sidewalk, Road.)

Blaw-Knox Co., Pittsburgh, Pa.

—Plate Construction.

Biggs Boiler Works Co., Akron, Ohio.

Birmingham Boiler & Engr. Co., Birmingham, Ala.

Carolina Steel & Iron Co., Greensboro, N. C.

Central Iron & Steel Co., Harrisburg, Pa.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.

Combustion Engr. Corp., New York City.

Hammond Iron Works, Warren, Pa.

Ingalls Iron Works Co., Birmingham, Ala.

Meeklenburg Iron Works, Charlotte, N. C.

Petroleum Iron Works Co., Sharon, Pa.

Phoenix Iron Co., The, Phila., Pa.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Sistersville Tank & Boiler Works, Sistersville, W. Va.

—Tank Heads.

Commercial Shearing & Stamping Co., Youngstown, Ohio.

STENCIL CUTTING MACHINES.

Diagraph Stencil Machine Corp., St. Louis, Mo.

STOKERS (Mechanical.)

Babcock & Wilcox Co., The, New York.

Combustion Engr. Corp., New York City.

STORAGE Batteries.

Electric Storage Battery Co., Philadelphia.

—Bins (Steel.)

Blaw-Knox Co., Pittsburgh, Pa.

Butler Bin Co., Waukesha, Wis.

STRIPS (Steel.)

American Steel & Wire Co., Baltimore.

Harrisburg Pipe and Pipe Bending Co., Harrisburg, Pa.

STRUCTURAL STEEL (Hot Galvanized.)

Bessemer Galvanizing Works, Birmingham.

—and Iron.

American Bridge Co., New York, N. Y.

Belmont Iron Works, Philadelphia, Pa.

Carnegie Steel Co., Pittsburgh, Pa.

Carolina Steel & Iron Co., Greensboro, N. C.

Champion Bridge Co., Wilmington, Ohio.

Converse Bridge & Steel Co., Chattanooga, Tenn.

Dietrich Brothers, Baltimore, Md.

Eichleay, Jr. Co., John, Pittsburgh.

Erie Steel Constr. Co., Erie, Pa.

Ingalls Iron Works Co., Birmingham, Ala.

McClintic-Marshall Co., Pittsburgh, Pa.

Muskogee Iron Works, Muskogee, Okla.

Nashville Bridge Co., Nashville, Tenn.

Phoenix Iron Co., The, Phila., Pa.

Pidgeon-Thomas Iron Co., Memphis, Tenn.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Republic Iron & Steel Co., Youngstown, O.

Richmond Struc. Steel Co., Richmond, Va.

TANKS (Air Compressor.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.
Scaife & Sons, Wm. B., Oakmont, Pa.
Titusville Iron Works Co., Titusville, Pa.

—(Elevated Steel.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.
Petroleum Iron Works Co., Sharon, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Elevated Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.

—(Iron and Steel.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.
American Bridge Co., New York, N. Y.
Biggs Boiler Works Co., Akron, Ohio.
Birmingham Tank Co., Birmingham, Ala.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.

Downingtown Iron Works, Downingtown, Pa.
Hammond Iron Works, Warren, Pa.

Lombard Iron Works & Supply Co., Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.

Petroleum Iron Works Co., Sharon, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Scaife & Sons, Wm. B., Oakmont, Pa.
Schofield's Sons Co., J. S., Macon, Ga.

Sistersville Tank & Boiler Works, Sistersville, W. Va.
Titusville Iron Works Co., Titusville, Pa.

Virginia Bridge & Iron Co., Roanoke, Va.
Westinghouse Traction Brake Co., Wilmerding, Pa.

—(Seamless Steel.)
Janney, Jr., Jos. A., Phila., Pa.

National Tube Co., Pittsburgh, Pa.

—(Storage, Oil, etc.)
Biggs Boiler Works, Akron, Ohio.

Birmingham Boiler & Engr. Co., Birmingham, Ala.

Chicago Bridge & Iron Works, Atlanta, Ga.

Downingtown Iron Works, Downingtown, Pa.

Hammond Iron Works, Warren, Pa.

Ingersoll Iron Works Co., Birmingham, Ala.

Mecklenburg Iron Works, Charlotte, N. C.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Titusville Iron Works Co., Titusville, Pa.

—(Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.

Davis & Son, G. M., Palatka, Fla.

Virginia Mch. & Well Co., Richmond, Va.

Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.

—(Wood Pickling.)
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—(Wood Pickling.)
Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.

TIN AND TERNE PLATES.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

TOBACCO MACHINERY.

Ripley Foundry & Machine Co., Ripley, O.

TOILET TISSUE.

Victoria Paper Mills Co., Fulton, N. Y.

TOOLS (Measuring.)

Lufkin Rule Co., Saginaw, Mich.

—(Woodworking—Portable.)

Electric, Hand.
Wappat, Incorporated, Pittsburgh, Pa.

TORCHES (Blow.)

Wall Mfg. Supply Co., P., Pittsburgh, Pa.

TOWERS (Electric Transmission.)

American Bridge Co., New York, N. Y.

Bessemer Galv. Wks., Birmingham, Ala.

Muskogee Iron Works, Muskogee, Okla.

Nashville Bridge Co., Nashville, Tenn.

—(Radio.)
Bessemer Galv. Wks., Birmingham, Ala.

Muskogee Iron Works, Muskogee, Okla.

—(Steel and Wood.)
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Cole Mfg. Co., R. D., Newnan, Ga.

TRACK (Portable or Permanent.)

Sweet's Steel Co., Williamsport, Pa.

TRACTORS (Industrial.)

Atlas Car & Mfg. Co., The, Cleveland, O.

Caterpillar Tractor Co., San Leandro, Cal.

Cleveland Tractor Co., Cleveland, Ohio.

International Harvester Co., of America, Inc., Chicago, Ill.

—(Road.)
Caterpillar Tractor Co., San Leandro, Cal.

Cleveland Tractor Co., Cleveland, Ohio.

—(Attachments (Side Boom.)
W-K-M Co., Inc., Houston, Texas.

TRAILERS (Drop Frame.)

Fruehauf Trailer Co., Detroit, Mich.

—(Four Wheel.)
Electric Wheel Co., Quincy, Ill.

Fruehauf Trailer Co., Detroit, Mich.

—(Heavy Duty.)
Electric Wheel Co., Quincy, Ill.

Fruehauf Trailer Co., Detroit, Mich.

—(Industrial.)
Easton Car & Construction Co., Easton, Pa.

Electric Wheel Co., Quincy, Ill.

—(Pole.)
Electric Wheel Co., Quincy, Ill.

Fruehauf Trailer Co., Detroit, Mich.

TRAMWAYS (Aerial Wire Rope.)

American Steel & Wire Co., Balto., Md.

Broderick & Bascom Rope Co., St. Louis.

Leschen & Sons Rope Co., A., St. Louis.

TRANSFORMERS.

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Used.)
Electric Service Co., Cincinnati, Ohio.

TRANSMISSION TOWERS (Galvanized.)

Bessemer Galvanizing Works, Birmingham.

Muskogee Iron Works, Muskogee, Okla.

Ritter-Conley Co., Pittsburgh, Pa.

TRENCH MACHINERY. See Excavators (Trench.)**TRESTLES (Wooden.)**

Patent Scaffolding Co., Chicago, Ill.

TRI-SODIUM PHOSPHATE.

Grasselli Chemical Co., Inc., Birmingham, Ala.

TROLLEY WHEELS (Self Oiling.)

Moccasin Bushing Co., Chattanooga, Tenn.

TRUCK CRANES.

Universal Crane Co., Lorain, O.

TRUCKS (Dry Kiln.)

Moore Dry Kiln Co., Jacksonville, Fla.

—(Industrial.)
Atlas Car & Mfg. Co., The, Cleveland, O.

Clark Tractor Co., Battle Creek, Mich.

Lansing Co., Lansing, Mich.

Service Caster & Truck Co., Albion, Mich.

—(Motor.)

International Harvester Co., of America, Inc., Chicago, Ill.

—(Platform, Freight, Mill, Factory, etc.)

American Pulley Co., Philadelphia, Pa.

Clark Tractor Co., Battle Creek, Mich.

Electric Wheel Co., Quincy, Ill.

Service Caster & Truck Co., Albion, Mich.

Trucon Steel Co., (Pressed Steel Division) Cleveland, Ohio.

—(Steel Shop.)

Angie Steel Stool Co., Plainwell, Mich.

TUBES (Boiler.) See Boiler Tubes.**TUBING (Metal.)**

Boiler Tube Co., of America, Pittsburgh.

—(Seamless Steel.)
National Tube Co., Pittsburgh, Pa.

Timken Rolling Bearing Co., Canton, O.

TURBINES (Hydraulic.)

Cook, Inc., A. D., Lawrenceburg, Ind.

Lafayette & Co., The, James, Springfield, O.

Smith Co., S. Morgan, York, Pa.

—(Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

DeLaval Steam Turbine Co., Trenton, N. J.

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

TURNBUCKLES.

Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

TURNABLES.

American Bridge Co., New York, N. Y.

Easton Car & Construction Co., Easton, Pa.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Portable for Motor Trucks.)
Blaw-Knox Co., Pittsburgh, Pa.

UNIONS.

Dart Mfg. Co., E. M., Providence, R. I.

UNIT HEATERS.

Grinnell Co., Inc., Providence, R. I.

VALVES.

Columbian Iron Works, Chattanooga, Tenn.

Jenkins Bros., New York, N. Y.

Ludlow Valve Mfg. Co., The, Troy, N. Y.

Lunkenheimer Co., The, Cincinnati, Ohio.

Merco Nordstrom Valve Co., San Francisco, Cal.

Mueller Co., Decatur, Ill.

Vogt Brothers Mfg. Co., Louisville, Ky.

Vogt Machine Co., Henry, Louisville, Ky.

Westinghouse Traction Brake Co., Wilmerding, Pa.

—(Acid Proof.)
Lunkenheimer Co., The, Cincinnati, O.

—(Gate.)
Ludlow Valve Mfg. Co., The, Troy, N. Y.

Lunkenheimer Co., The, Cincinnati, Ohio.

Wood & Co., R. D., Philadelphia, Pa.

VENTILATING SYSTEMS.

Clarage Fan Co., Kalamazoo, Mich.

Skinner Bros. Mfg. Co., St. Louis, Mo.

Swartwout Co., Cleveland, Ohio.

VENTILATORS (Roof.)

Merchant & Evans Co., Philadelphia, Pa.

Robertson Co., H. H., Pittsburgh, Pa.

—(Rotary.)
Swartwout Co., Cleveland, Ohio.

WALL HANGERS.

Duplex Hanger Co., Cleveland, Ohio.

WARDROBES (Hygienic, School.)

Wilson Corp., The J. G., New York.

WATCHMAN'S PORTABLE CLOCKS.

Davis-Paradis Watchman's Clock Corp., New York, N. Y.

Kaiser Klock Co., L. E., Balto., Md.

WATERPROOFING (For Brick, Concrete, Granite.)

Foster Co., Benjamin, Philadelphia, Pa.

Solvay Sales Corp., New York City.

Sennelock, Sons, Inc., L., New York.

WATER Purification.

Roberts Filter Mfg. Co., Darby (Phila.), Pa.

Scaife & Sons, Wm. B., Oakmont, Pa.

—(Softening Apparatus (Purifying).)
American Water Softener Co., Phila., Pa.

International Filter Co., Chicago, Ill.

—(Walls.)
Springfield Boiler Co., Springfield, Ill.

—Works Supplies and Appliances.

Amer. Cast Iron Pipe Co., Birmingham.

Cast Iron Pipe Research Assn., Chicago.

Columbian Iron Works, Chattanooga, Tenn.

Cook, Inc., A. D., Lawrenceburg, Ind.

Glanmorgan Pipe & Fdry. Co., Lynchburg, Va.

Leadite Co., The, Philadelphia, Pa.

Mueller Co., Decatur, Ill.

U. S. Pipe & Foundry Co., Burlington, N. J.

Waterous Co., St. Paul, Minn.

Wood & Co., H. D., Philadelphia, Pa.

WELDING APPARATUS (Electric Arc.)

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Apparatus (Oxy-Acetylene).)
Imperial Brass Mfg. Co., Chicago, Ill.

Milburn Co., The, Alexander, Balto., Md.

—(Supplies (Oxy-Acetylene).)
Imperial Brass Mfg. Co., Chicago, Ill.

K

Kaiser Klock Co., L. E.
Kansas City Bridge Co.
Kaustine Co.
Kentucky Rock Asphalt Co., Inc.
Kentucky Utilities Co.
Kerlow Steel Flooring Co.
Keystone Pump & Drill Co.
Kinnear Manufacturing Co.
Kirbye & Co.
Knowles, Morris, Inc.
Knoxville Iron Co.
Koehring Co.
Koppel Industrial Car & Equip. Co.

L

Lancaster Iron Works.
Lansing Co.
Law & Co., A. M.
Layne & Bowler, Inc.
Leadite Co.
Le Baron, E. T.
Lee Clay Products Co.
Lee Trailer & Body Co., Inc.
Lee, William S.
Lefel & Co., James.
Lehigh Portland Cement Co.
Leschen & Sons Rope Co., A.
Levis & Co., Henry.
Light Manufacturing & Foundry Co.
Lindale, Claude H.
Lockwood Greene, Engrs., Inc.
Lombard Iron Works & Supply Co.
Long Co., M. A.
Louisiana Corr. Culvert Co.
Louisville Cement Co.
Ludlow Engineers.
Ludlow-Saylor Wire Co.
Ludlow Valve Mfg. Co.
Lufkin Rule Co.
Lunkenheimer Co.
Lupton's Sons Co., David.

M

Macon Concrete Roller Co.
Mahon Co., R. C.
Main, Chas. T.
Manhattan Perf. Metal Co.
Manistee Iron Works Co.
Marine Metal & Supply Co.
Marx & Co.
Maryland Metal Bldg. Co.
Maryland Trust Co.
McClinton-Marshall Co.
McCrady Co., John.
McCrory Co., J. B.
McEverlast, Inc.
McLanahan and Stone Mch. Co.
McLaughlin, J. W.
Meeklenburg Iron Works.
Mees & Co.
Meigs, Bassett & Slaughter.
Mente & Co.
Mercantile Trust Co.
Merchant & Evans Co.
Merco Nordstrom Valve Co.
Meredith Co., Wm. C.
Milburn Co., Alexander.
Milburn, Heister & Co.
Miller & Anso., Wendell P.
Millner Co.
Milwaukee Electric Crane & Hoist Corp.
Missouri-Kansas-Texas Lines.
Missouri Pacific Lines.
Moccasin Bushing Co.
Model Land Co. (Flagler System).
Moeschl-Edwards Corrugating Co.
Moffatt Machry. Mfg. Co.
Monaghan Mfg. Corp.
Moore Dry Kiln Co.
Morgan Construction Co.
Morris Machine Works.
Morse Chain Co.
Mott Core Drilling Co.
Moyer Co., Tilghman.
Mueller Co.
Mullergren, Arthur L.
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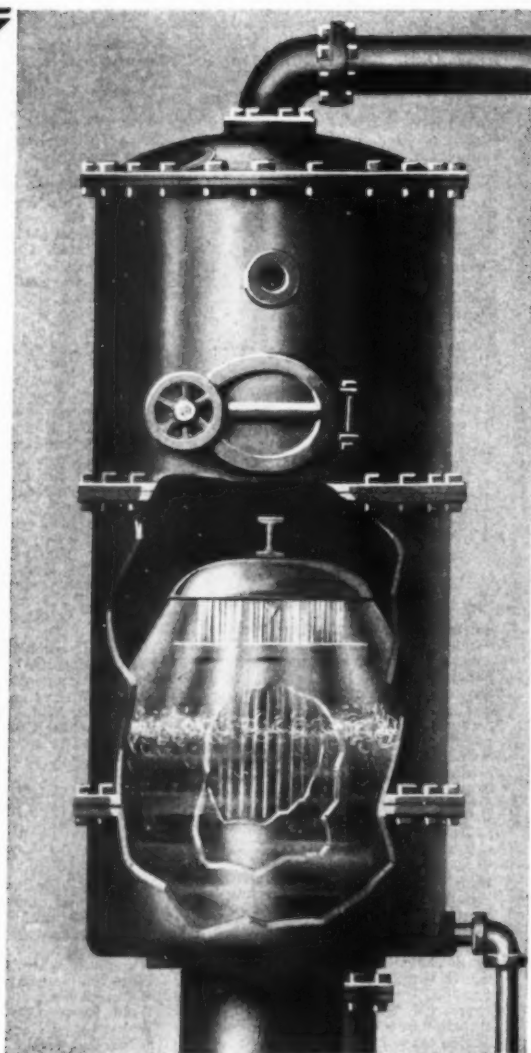
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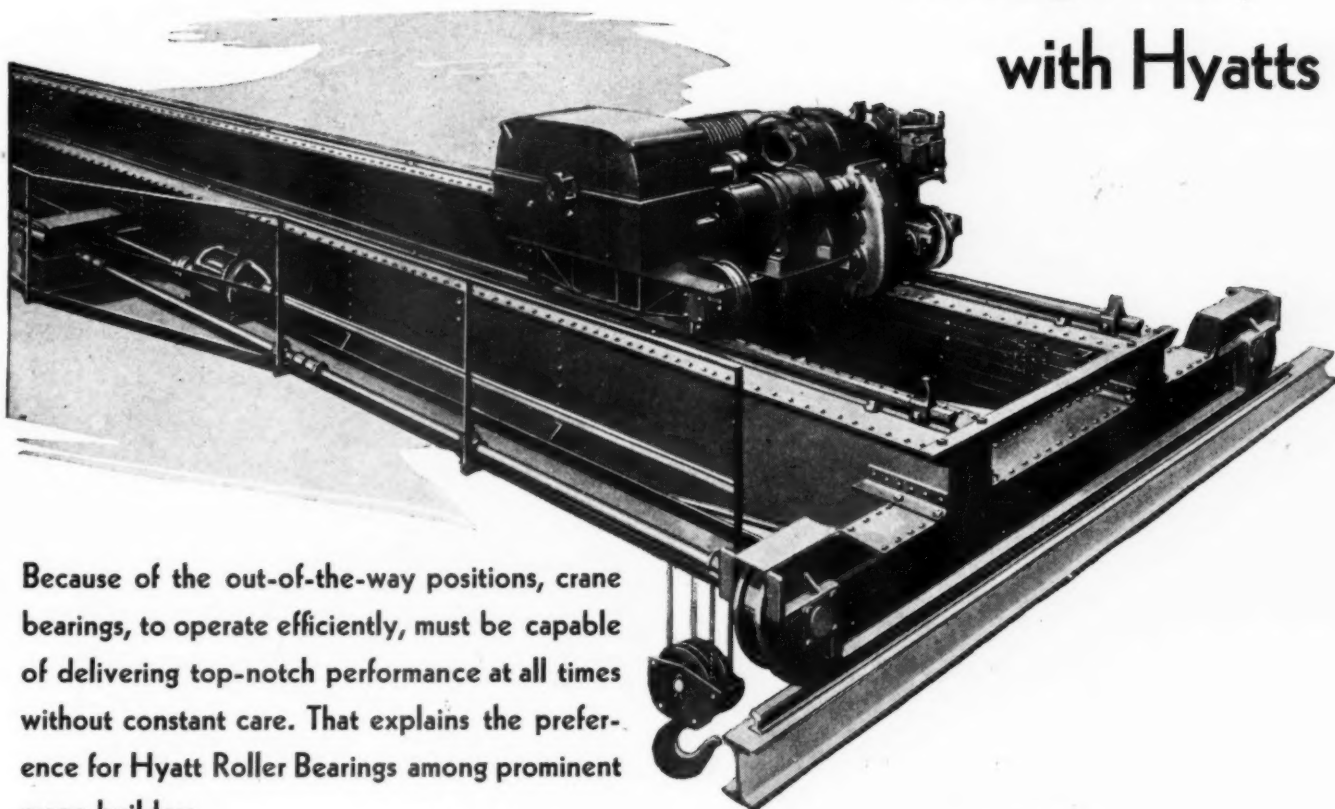
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